

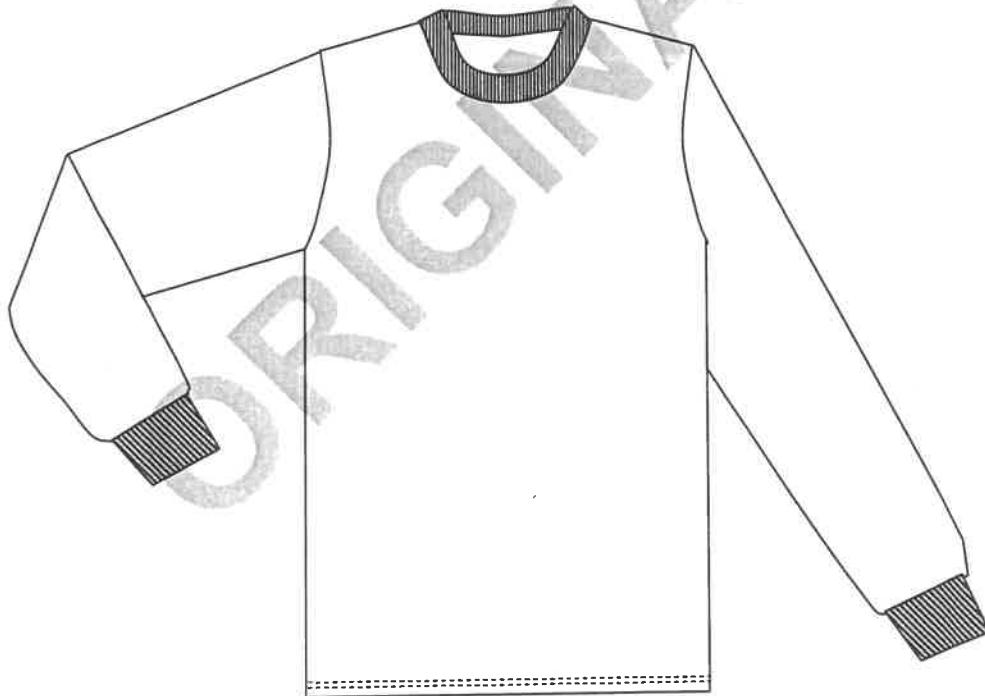
PRIVATE SPECIFICATION

Prepared for the

SOUTH AFRICAN AIR FORCE



THERMAL VEST, LONG SLEEVES



SALM 381
Revised July 2008

1. Scope

This specification covers the material and make of long sleeved thermal vests for personnel of the South African Air Force.

2. Definitions and Abbreviations

For the purpose of this specification the definitions given in SANS 10371 "Terms and definitions for clothing" and the following shall apply:

acceptable: acceptable to the South African Air Force

nominal: subject to the tolerances normal to good manufacturing practice

SANS: South African National Standard

3. Style

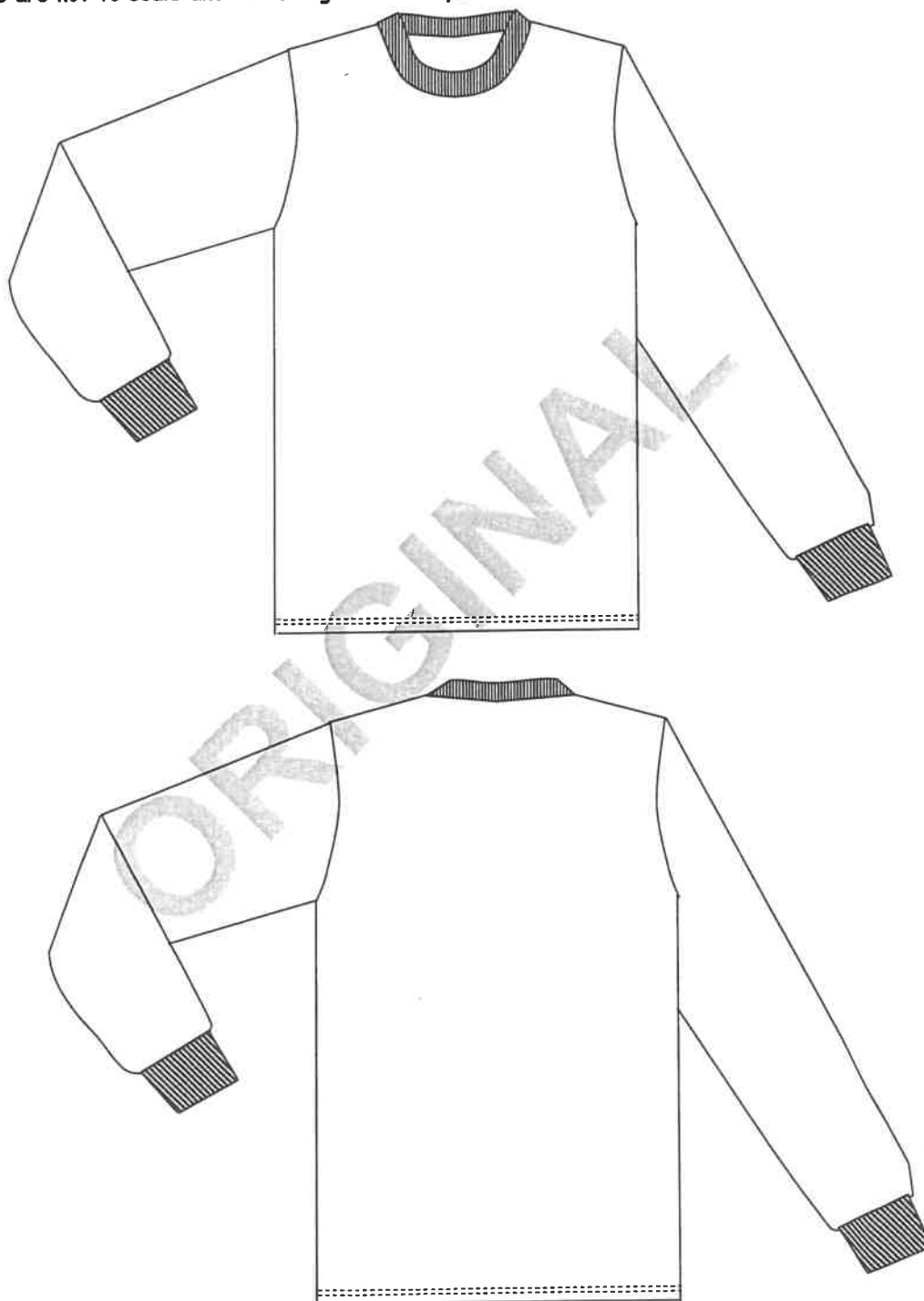
The style is as follows:

- ♦ round neck
 - fitted with rib fabric
- ♦ long set-in sleeves
 - fitted with rib fabric cuffs
- ♦ straight side seams
- ♦ extra long
- ♦ plain bottom hem
- ♦ supplied in two colours (pine green and/or white as specified in the order or contract)

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4. Illustrations

Illustrations are not to scale and are for guidance only.



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5. Client Furnished Materials

No materials will be supplied by the South African Air Force.

6. Component Materials

The following materials shall be supplied and used by the manufacturer. Trim charts shall also be submitted by the manufacturer (see Annex A).

6.1 Knitted fabric

- ♦ to comply with the requirements as given in table 1
- ♦ colour to be a match, in terms of SANS 10076-4, "The assessment of defects in textile piece-goods and made-up articles – Part 4: Defects in knitted piece-goods" to the following CKS 129 colours (as specified in the order or contract):
 - colour No. 87c-04¹ "Pine green (thermal wear)"
 - colour No. 1c-05¹ "White"
- ♦ permissible number of defects, in terms of SANS 10076-4, to be based on the following LAQs:
 - for pieces : 10
 - for a lot : 8
 - all defects to be strung
 - 20 cm to be deducted for each string
 - continuous defects to be measured along the length of the fabric and the length of the measured defect to be deducted

¹ See Annex B.

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Table 1 – Requirements for knitted body fabric

1	2	3
Property	Requirement	SANS number (unless otherwise indicated)
Fibre composition, % Feeders 1 and 3 Feeders 2 and 4	All combed cotton All spun polyester	AATCC 20
Construction	Circular weft-knitted double- faced rib-gated tuck construction consisting of a 4-course repeat ^a	Visual examination and physical analysis
Yarn linear density, tex Polyester and cotton yarns	15,5 ± 0,5	6103
Mass per area, g/m²	175 ± 15	5385
Stitch length, mm All knit courses	3,7 ± 0,5	6104
Knit-tuck course	2,5 ± 0,1	
Dimensional change on laundering ^b, %, max.		960 washing procedure A1 drying procedure F
Length	12	
Width	12	
Colour fastness to ^c:		
Washing, rating, min.		105-C10 test C(3)
Change in colour	4	
Staining	4	
Perspiration, rating, min.		105-E04
Change in colour	4	
Staining	4	
Light, rating, min.	5	105-B02

^a See figure 3.
^b Tested in tubular form. Tumble-dry the test specimens for 20 min at 70 °C.
^c Rate both the back and the front of the test specimens.

FEEDER No.	YARN	RIB GATING
1	15,5 tex combed cotton	Dial needles inactive Knitting on all cylinder needles
2	15,5 tex spun polyester	Knitting on all dial needles Cylinder needles inactive
3	15,5 tex combed cotton	Tucking on alternate dial needles Knitting on cylinder needles
4	15,5 tex spun polyester	Knitting on all dial needles Cylinder needles inactive

6.2 Rib fabric

- ♦ acceptable 1 x 1 rib-knitted fabric
- ♦ to comply with the requirements as given in table 2
- ♦ to comply with the colour fastness requirements as specified for the knitted fabric
- ♦ colour to be an acceptable match to the relevant colour of the knitted fabric

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Table 2 – Requirements for rib fabric

1	2	3
Property	Requirement	SANS number (unless otherwise indicated)
Fibre composition, %	All combed cotton	AATCC 20
Construction	1 × 1 rib	Visual examination and physical analysis
Yarn linear density, tex	25,0 ± 0,1	6103
Mass per area, g/m ² , min.	220	5385
Stitch length, mm	3,0 ± 0,2	6104

6.3 Threads

- ♦ to comply with relevant requirements of SANS 1362 "Sewing threads"
- ♦ colour to be an acceptable match to the colour with which it is used

Sewing and overlocking thread:

- ♦ polyester-and-cotton core-spun **OR** staple polyester
- ♦ ticket No 120

7. Workmanship

The Vests shall be:

- ♦ cut and made with first-class workmanship throughout
- ♦ of uniform and acceptable make, colour and finish

Shall be free from:

- ♦ defects, that affect their appearance or may affect their serviceability (or both)
- ♦ marks and spots
- ♦ stains, incurred in the making-up

Seams and stitches shall be:

- ♦ smooth and uniform
- ♦ free from twists, pleats and puckers
- ♦ sufficiently extensible to avoid seam cracking and undue shrinkage in use

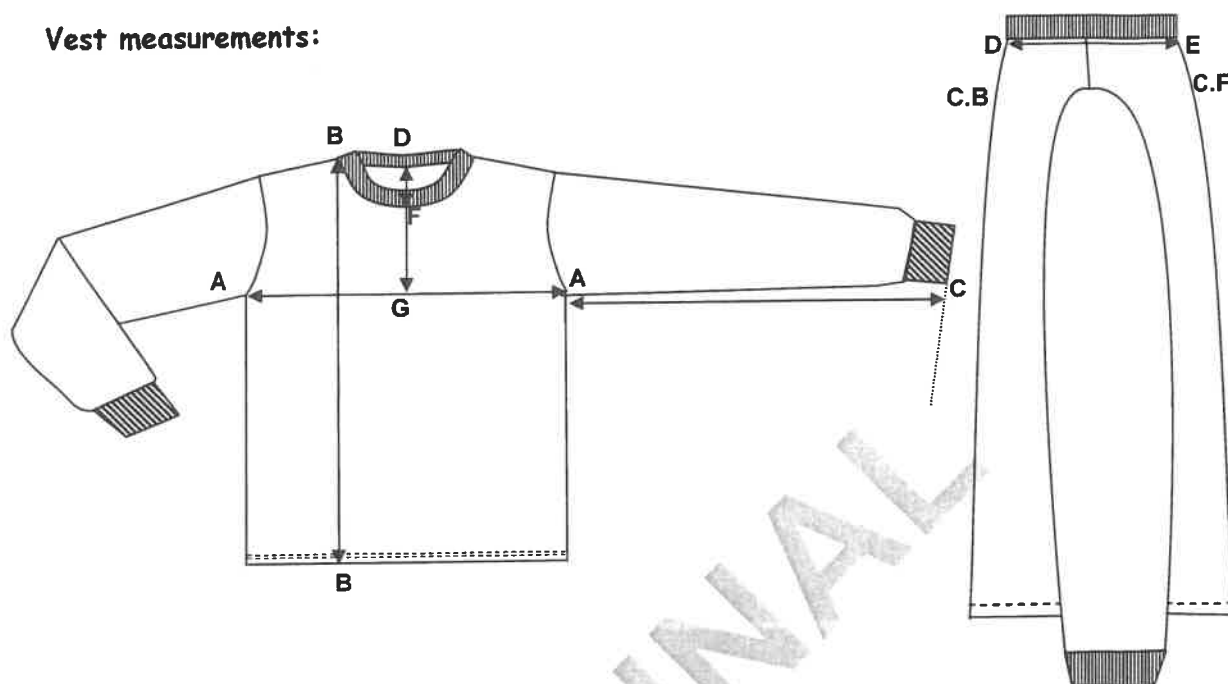
Ends of sewing shall be:

- ♦ trimmed and loose threads removed
- ♦ back-tacked if unsecured

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8. Sizes and dimensions

Vest measurements:



MEASURING POINT		DESCRIPTION
A - A	Chest circumference	Measure across the width of the chest, at the base of the scye, with the vest spread completely flat, and multiply by two.
B - B	Length	Measure from the neck point to the outer edge of the bottom hem.
A - C	Sleeve length	Measure from the base of the scye, along the underarm seam, to the outer edge of the cuff.
D - E	Neck circumference	Measure across the neck opening (along body-to-rib-seam) by placing the shoulder points on top of each other, from centre front to centre back and multiply by two.
D - F	Neck drop	Measure the length at the centre back, from the back-to-rib seam to the front-to-rib seam.
D - G	Depth of scye	Measure from the centre back, from the rib-to-body seam, to a point level with the base of the scye.

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Table 3 - Size range

1	2	3	4	5	6	7	8	9
National Stock Number		Size designation ¹	Nominal finished garment measurements, cm					
White	Pine Green		Chest	Length	Sleeve length	Neck circumference	Neck drop	Depth of scye
8415-18-022-0514	8415-18-020-8691	Small 87/92	82	78	44	52	6,5	24
8415-18-022-0523	8415-18-179-3815	Medium 97/102	92	80	45	54	6,5	25
8415-18-022-0509	8415-18-179-3816	Large 107/112	102	82	46	56	6,5	26
8415-18-022-0516	8415-18-020-8688	X-Large 117/122	112	84	47	58	6,5	27
8415-18-022-0511	8415-18-020-8692	XX-Large 127/132	122	86	48	60	6,5	28

¹ Based on the chest circumference of the intended wearer, in centimetres.

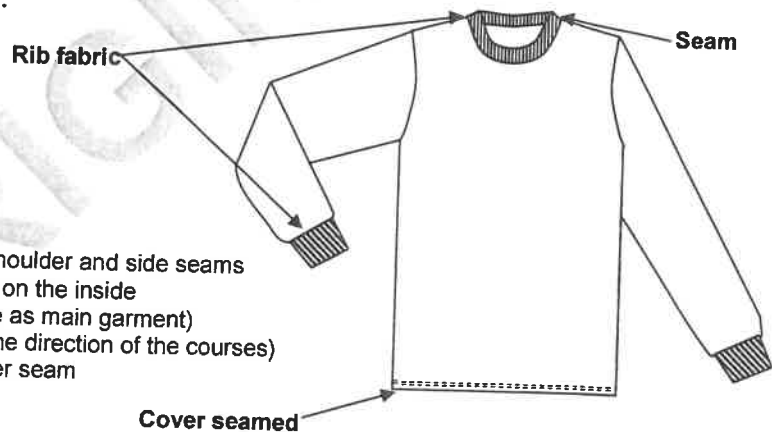
9. Make

Illustrations are not to scale and are for guidance only, and unless inconsistent with the text, all measurements are nominal.

9.1 Body

The body shall:

- ♦ consist of two parts
 - front
 - back
- ♦ be seamed together at the shoulder and side seams
- ♦ stayed at the shoulder seam on the inside
 - with knitted fabric (same as main garment)
 - of width 15 mm (cut in the direction of the courses)
 - sewn in with the shoulder seam



9.2 Neck opening

The neck opening shall:

- ♦ be round
- ♦ be fitted with rib fabric
 - of finished depth 30 mm (after it has been folded double)
 - the joining seam shall be positioned in line with the shoulder seam on the left (when worn)
- ♦ comply with the measurements as given in columns 7 and 8 of table 3

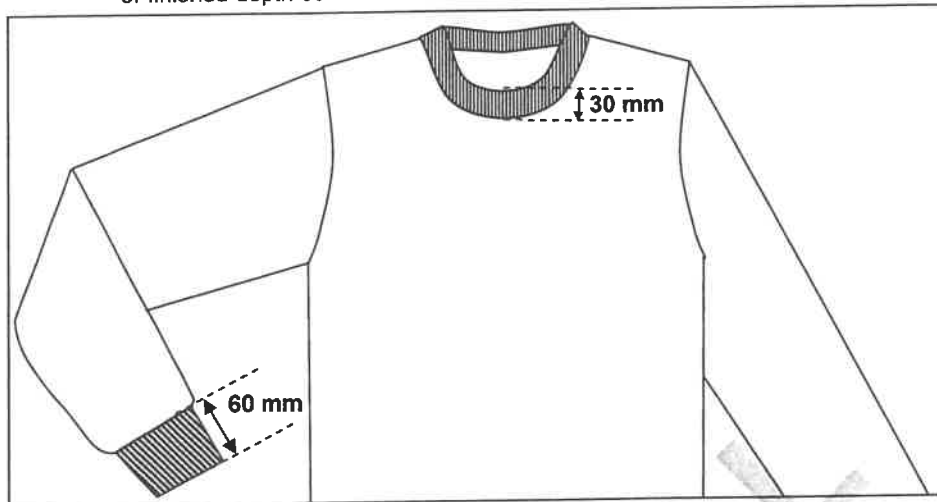
9.3 Sleeves

The sleeves shall be:

- ♦ long
- ♦ set-in

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- ◆ seamed under the arms
- ◆ fitted with cuffs
 - rib fabric
 - of finished depth 60 mm after it has been folded double and sewn to the sleeve edge



9.4 Hems

The bottom hems shall be:

- ◆ cover seamed
- ◆ of finished width 20 mm

10. Stitches, Seams and Stichings

10.1 Stitches

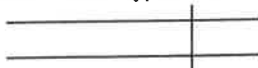
Side, shoulder, sleeve insertion, under arms seams and rib attachment: three-thread overlocking stitch

Hems: cover stitch

10.2 Seams

Seams to be at least 10 mm wide (unless otherwise stated):

Side and underarm sleeve seams: seam type SSa



Superimpose two or more plies of material and seam with one row of stitches positioned at the specific distance(s) from the aligned edges.

Shoulder seam: seam type SSab-1

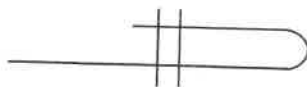


Superimpose a strip on two plies of material and seam with the appropriate number of rows of stitches (positioned at the specified distance(s) from the aligned edges).

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10.3 Stitchings

Bottom hem: stitching type EFa-2



Turn in the specified width at the edge of a ply of material and stitch the turned edge with appropriate number of rows of stitches

10.4 Number of stitches

The determination of sewing stitches per unit length: use SANS 5278 "Sewing stitches per unit length"

All stitches: 40 ± 4 per 10 cm

11. Care-labelling and marking of each vest

11.1 Label properties (Care-labels and garment labels)

All labels shall:

- ♦ be white woven rayon labels that are printed
- ♦ comply with SANS 1309 "Printed labels for textiles"
 - information to be in legible and indelible block letters of height at least 3 mm
- ♦ permanently secured
- ♦ be such that they outlast the garments (including the markings)

11.2 Care-labelling

- ♦ Each garment to have a label that is permanently secured
 - to provide appropriate care instructions (in accordance with SANS 10011 "Care-labelling of textile piece-goods, textile articles and clothing" and table 4) in words and symbols
 - to provide the fibre composition of the fabric in accordance with the requirements of SANS 10235 "Fibre content labelling of textiles and textile products"

Table 4 – Care Instructions

	Wash at 40°C maximum
	Do not bleach
	Do not tumble dry
	Cool iron 110°C maximum
	Do not clean professionally

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11.3 Marking

- ◆ Each vest to have, secured to the back neck seam on the inside, a label that provides the following information:
 - the National Stock Number
 - the size designation
 - the manufacturer's name or trade mark or both
 - the year of manufacture

12. Packing and marking of packaging

12.1 Packing

12.1.1 The vests shall be:

- ◆ delivered in a commercially dry condition
- ◆ so packed that they will not be damaged in transit or in storage
- ◆ neatly folded and individually packed in a plastics envelope of suitable size and shape
- ◆ unless otherwise specified in the order or contract, acceptably packed (in units of 10) for transit in acceptable bulk containers that comply with the requirements of SALM 108 "Corrugated board boxes for clothing"

12.1.2 Vests:

- ◆ of the same colour and size designation to be packed together in a bulk container (unless quantities ordered are such that packing together of the same size and colour only are not justified)
- ◆ of different colours and size designations may also be packed together to accommodate the last part of an order or contract

12.2 Marking of packaging

12.2.1 Plastics envelopes:

Each plastics envelope to be clearly marked with the following information:

- ◆ the designation, i.e. "Thermal vest, long sleeves"
- ◆ the size designation
- ◆ the National Stock Number

12.2.2 Bulk containers:

Each bulk container shall be labelled as given in paragraph 11.2 of SALM 108 "Corrugated board boxes for clothing".

12.3 Additional marking

When so required by the South African Air Force, vests, envelopes or containers (or any combination of these) to bear information additional to that specified above.

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13. Applicable Documents

The following documents contain provisions which, through reference in this text, constitute provisions of this specification. All documents are subject to revision and, since any reference to a document is deemed to be a reference to the latest edition of that document, parties to agreements based on this specification are encouraged to take steps to ensure the use of the most recent editions of the documents indicated below. Information on currently valid national, international and CKS documents may be obtained from Standards South Africa*.

AATCC test method 20, *Fiber analysis: Qualitative*. Available from World Wide Web

http://www.aatcc.org/Technical/Test_Methods/scopes/tm20.cfm

CKS 129, *Colours for textiles*.

SALM 108, *Corrugated board boxes for clothing*.

SANS 105-B02/ISO 105-B02, *Textiles – Tests for colour fastness – Part B02: Colour fastness to artificial light: Xenon arc fading lamp test*.

SANS 105-C10/ISO 105-C10, *Textiles – Tests for colour fastness – Part C10: Colour fastness to washing with soap or soap and soda*.

SANS 105-E04/ISO 105-E04, *Textiles – Tests for colour fastness – Part E04: Colour fastness to perspiration*.

SANS 960, *Textiles – Dimensional stability during washing and drying procedures*.

SANS 1309, *Printed labels for textiles*.

SANS 1362, *Sewing threads*.

SANS 5278, *Sewing stitches per unit length*.

SANS 5385, *Mass per unit area of conditioned knitted textiles*.

SANS 6103, *Linear density of yarns in weft-knitted fabrics*.

SANS 6104, *Stitch length of weft-knitted fabrics*.

SANS 10011, *Care-labelling of textile piece-goods, textile articles and clothing*.

SANS 10076-4, *The assessment of defects in textile piece-goods and made-up articles – Part 4: Defects in knitted piece-goods*.

SANS 10235, *Fibre-content labelling of textiles and textile products*.

SANS 10371, *Terms and definitions for clothing*.

* Standards South Africa: Tel. +27 (0) 12 4287911

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ANNEX A

(Normative)

Special conditions of tender

A-1 GENERAL

- A-1.1** Unless otherwise stated, the South African Bureau of Standards shall be the inspecting authority.
- A-1.2** Three pre-production sample vests shall have been inspected, tested and approved by the inspecting authority before bulk production is commenced. Each one of these samples shall be accompanied by a trim chart containing a sample of each component material (as given in 6.2 and 6.3) and the relevant certificates. It shall be the duty of the manufacturer to give adequate notice to the inspecting authority of the availability of these samples.
- A-1.3** The vests shall be subject to inspection during the course of manufacture. The inspector shall, during normal working hours, be given all reasonable facilities for carrying out his duties and shall have the right of entry into the contractor's factory and the factory or works of any subcontractor where work on vests supplied to this specification may be in progress
- A-1.4** The contractor shall inspect the finished vests for compliance with the specification before submitting them to the inspecting authority for final inspection.
- A-1.5** Before acceptance, the vests shall have been inspected and tested by the inspecting authority and found to comply with the requirements of the specification.

A-2 DOCUMENTATION

One container of each consignment shall be marked "DOCUMENTS" and in addition to the vests, shall contain the following:

- a) The packaging slip or delivery note;
- b) where applicable the inspection certificate(s);
- c) a copy of the invoice containing the following information:
 - the order number
 - the financial authority number
 - a full description of the consignment, i.e. National stock number, quantity, etc

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ANNEX B
(Normative)
CKS 129 Colours

Due to the fact that colours can change over a period of time, any colour standard which has been registered for a period of SEVEN YEARS or more shall be considered obsolete. These standards shall then be allocated an archived status (as opposed to current status) and re-registration shall be required.

A. The following scenarios require a submission of three metres of fabric from the successful tenderer:

1. A colour standard is archived.
2. First time registration is required (CKS 129 colour number does not exist).
3. Colour swatch stock at the SABS is no longer available.

B. Requirements regarding the submission of fabric as Identified in A:

1. The colour shall be as agreed upon between the South African Air Force and the successful tenderer.
2. The fabric shall be used to make new colour swatches which shall be the responsibility of the SABS.
3. The cost of the three metres of fabric shall be incorporated in the relevant tender submission.

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HISTORY SHEET				
DOC ISSUE	DATE	AMENDMENTS/HISTORY	CHECKED	
			NAME	INIT.
1		First release		
2	August 1997			
3	June 2008	a) Updated format, references and layout of spec. b) Included fabric (knitted fabric and cuffs) requirements in spec. c) Add reference to a 2 nd colour, i.e pine green. d) Add Annex B. e) Amend size chart. f) Add measuring points. g) Add NSNs. h) Add care-instructions as received from manufacturer. i) Change reference of bulk container labelling.		
4	July 2008	a) Change measuring point of neck circumference.		

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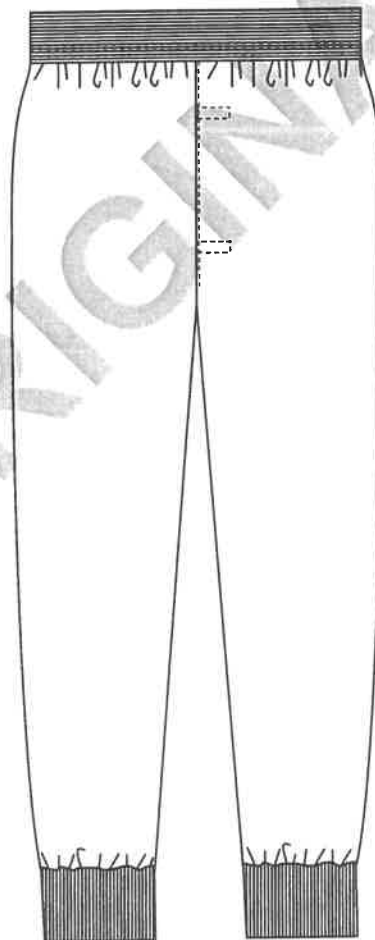
PRIVATE SPECIFICATION

Prepared for the

SOUTH AFRICAN AIR FORCE



THERMAL LONG JOHNS



SALM 382
Revised June 2008

1. Scope

This specification covers the material and make of long thermal underpants (long johns) for personnel of the South African Air Force.

2. Definitions and Abbreviations

For the purpose of this specification the definitions given in SANS 10371 "Terms and definitions for clothing" and the following shall apply:

acceptable: acceptable to the South African Air Force

nominal: subject to the tolerances normal to good manufacturing practice

SANS: South African National Standard

3. Style

The style is as follows:

- ♦ elasticized waist (laid-on elastic webbing)
- ♦ fly opening
- ♦ fitted with rib fabric cuffs at the bottom of the legs
- ♦ supplied in two colours (pine green and/or white as specified in the order or contract)

4. Illustrations

Illustrations are not to scale and are for guidance only.

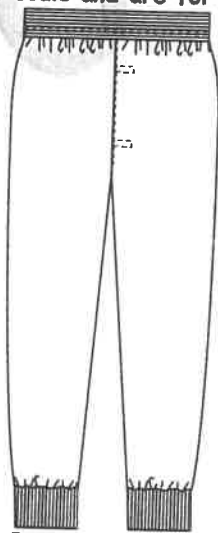


Figure 1 - Front



Figure 2 - Back

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5. Client Furnished Materials

No materials will be supplied by the South African Air Force.

6. Component Materials

The following materials shall be supplied and used by the manufacturer. Trim charts shall also be submitted by the manufacturer (see Annex A).

6.1 Knitted fabric

- ◆ to comply with the requirements as given in table 1
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 - colour No. 87c-04¹ "Pine green (thermal wear)"
 - colour No. 1c-05¹ "White"
- ◆ permissible number of defects, in terms of SANS 10076-4, to be based on the following LAQs:
 - For pieces : 10
 - For a lot : 8
 - all defects to be strung
 - 20 cm to be deducted for each string
 - continuous defects to be measured along the length of the fabric and the length of the measured defect to be deducted

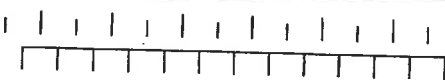

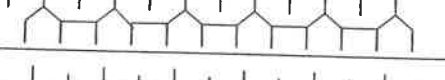
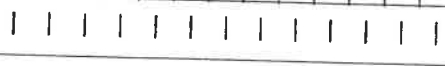
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Yarn linear density, tex Polyester and cotton yarns	15,5 ± 0,5	6103
Mass per area, g/m²	175 ± 15	5385
Stitch length, mm All knit courses Knit-tuck course	3,7 ± 0,5 2,5 ± 0,1	6104
Dimensional change on laundering ^b, % , max. Length Width	12 12	960 washing procedure A1 drying procedure F
Colour fastness to ^c: Washing , rating, min. Change in colour Staining	4 4	105-C10 test C(3)
Perspiration , rating, min. Change in colour Staining	4 4	105-E04
Light , rating, min.	5	105-B02

^a See figure 3.
^b Tested in tubular form. Tumble-dry the test specimens for 20 min at 70 °C.
^c Rate both the back and the front of the test specimens.

FEEDER No.	YARN	RIB GATING
1	15,5 tex combed cotton	 <p>Dial needles inactive Knitting on all cylinder needles</p>
2	15,5 tex spun polyester	 <p>Knitting on all dial needles Cylinder needles inactive</p>
3	15,5 tex combed cotton	 <p>Tucking on alternate dial needles Knitting on cylinder needles</p>
4	15,5 tex spun polyester	 <p>Knitting on all dial needles Cylinder needles inactive</p>

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6.2 Rib fabric

- ♦ acceptable 1 x 1 rib-knitted fabric
- ♦ to comply with the requirements as given in table 2
- ♦ to comply with the colour fastness requirements as specified for the knitted fabric
- ♦ colour to be an acceptable match to the colour of the knitted fabric

Table 2 – Requirements for rib fabric

1	2	3
Property	Requirement	SANS number (unless otherwise indicated)
Fibre composition, %	All combed cotton	AATCC 20
Construction	1 x 1 rib	Visual examination and physical analysis
Yarn linear density, tex	25,0 ± 0,1	6103
Mass per area, g/m ² , min.	220	5385
Stitch length, mm	3,0 ± 0,2	6104

6.3 Elastic webbing

- ♦ to comply with the requirements for type 1 of SANS 142 "Narrow elastic fabrics and strip"
- ♦ of nominal width 35 mm
- ♦ colour to be an acceptable match to the colour of the knitted fabric

6.4 Threads

- ♦ to comply with relevant requirements of SANS 1362 "Sewing threads"
- ♦ colour to be an acceptable match to the colour with which it is used

Sewing and overlocking thread:

- ♦ polyester-and-cotton core-spun **OR** staple polyester
- ♦ ticket No 120

7. Workmanship

The Long johns shall be:

- ♦ cut and made with first-class workmanship throughout
- ♦ of uniform and acceptable make, colour and finish

Shall be free from:

- ♦ defects, that affect their appearance or may affect their serviceability (or both)
- ♦ marks and spots
- ♦ stains, incurred in the making-up

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Seams and stitches shall be:

- ◆ smooth and uniform
- ◆ free from twists, pleats and puckers
- ◆ sufficiently extensible to avoid seam cracking and undue shrinkage in use

Ends of sewing shall be:

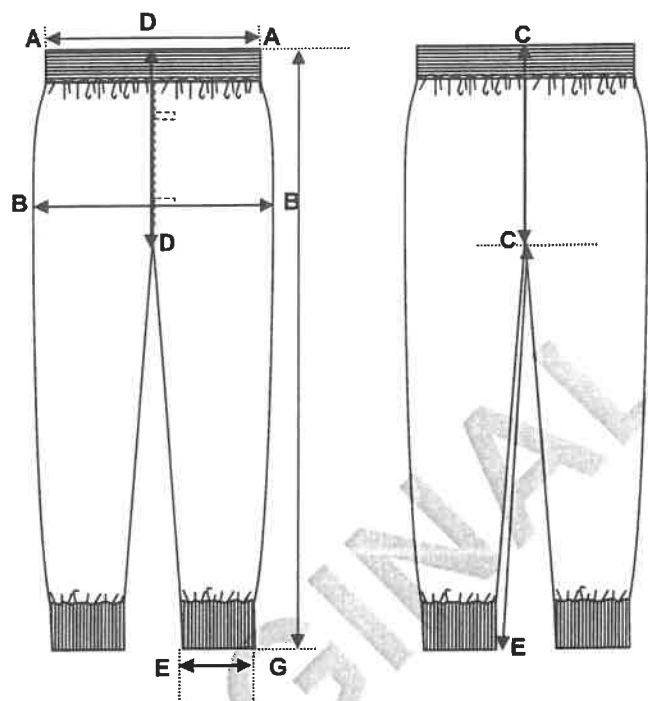
- ◆ trimmed and loose threads removed
- ◆ back-tacked if unsecured

ORIGINAL

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8. Sizes and dimensions

Long john measurements:



MEASURING POINT		DESCRIPTION
A - A	Waist circumference (relaxed)	Measure across the top edge of the elastic webbing, with the elastic relaxed, and multiply by two.
A - A	Waist circumference (extended)	Measure across the top edge of the elastic webbing, with the elastic fully extended, and multiply by two.
B - B	Seat circumference	Measure from the width of the garment at seat level (widest point) and multiply by two.
C - C	Back rise	Measure from the top edge of the elastic webbing at the centre back to the crotch seam.
D - D	Front rise	Measure from the top edge of the elastic webbing at the centre front to the crotch seam.
E - G	Cuff relaxed	Measure across the bottom edge of the cuff, with the cuff relaxed, and multiply by two.
C - E	Inside leg length	Measure from the crotch seam to the bottom edge of the cuff along the inside leg seam.
A - G	Outside leg length	Measure from the top edge of the elastic webbing along the side, to the bottom edge of the cuff.

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Table 3 – Size Range

1	2	3	4	5	6	7	8	9	10
National Stock Number		Size Designation ¹	Nominal finished garment measurements, cm						
White	Pine green		Waist relaxed	Waist extended	Seat	Total rise	Cuff relaxed	Inside leg length	Outside leg length
8415-18-022-0512	8415-18-020-8687	Small 77/82	62	102	90	68	11	67	100
8451-18-022-0519	8415-18-179-3817	Medium 87/92	72	112	100	70	11	68	103
8451-18-022-0510	8415-18-179-3818	Large 97/102	82	122	110	72	12	69	106
8451-18-022-0524	8415-18-020-8690	X-Large 107/112	92	132	120	74	12	70	109
8451-18-022-0515	8415-18-020-8681	XX-Large 117/122	102	142	130	76	13	71	112

1. Based on the waist circumference of the intended wearer, in centimetres.

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9. Make

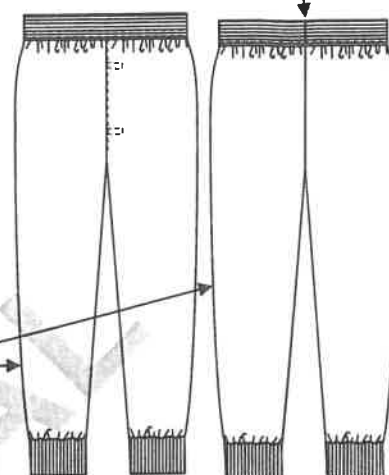
Illustrations are not to scale and are for guidance only, and unless inconsistent with the text, all measurements are nominal.

9.1 Body

The body shall:

- ◆ be cut in two halves
 - left section
 - right section
- ◆ be seamed along the inside legs and crotch (no side seams)
- ◆ incorporate a front opening
- ◆ be fitted with laid-on elastic at the top edge
 - seam to be positioned at the centre back

Centre back seam

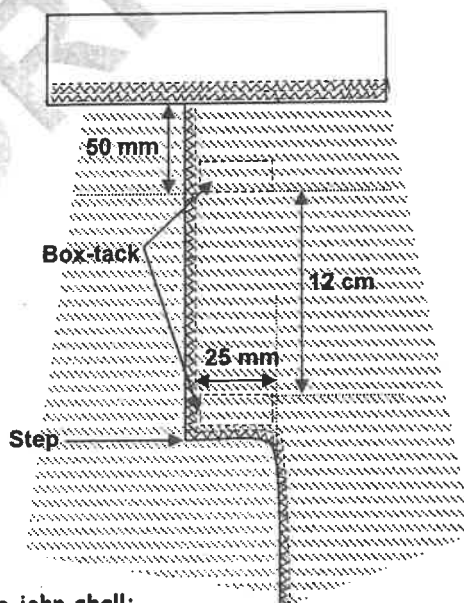


No side seams

9.2 Front opening

The front opening shall:

- ◆ be positioned in the centre front seam
 - seam to be cut with a step to form a fly of finished width 25 mm
 - left section (as worn) to be folded under
 - to overlap left over right
- ◆ be of finished length 12 cm
- ◆ extend from 50 mm below the elastic webbing at the waist
- ◆ be box-tacked at the top and bottom edges
- ◆ be edge-stitched 2 mm along the fold of the left section
- ◆ be overlocked along the raw edges

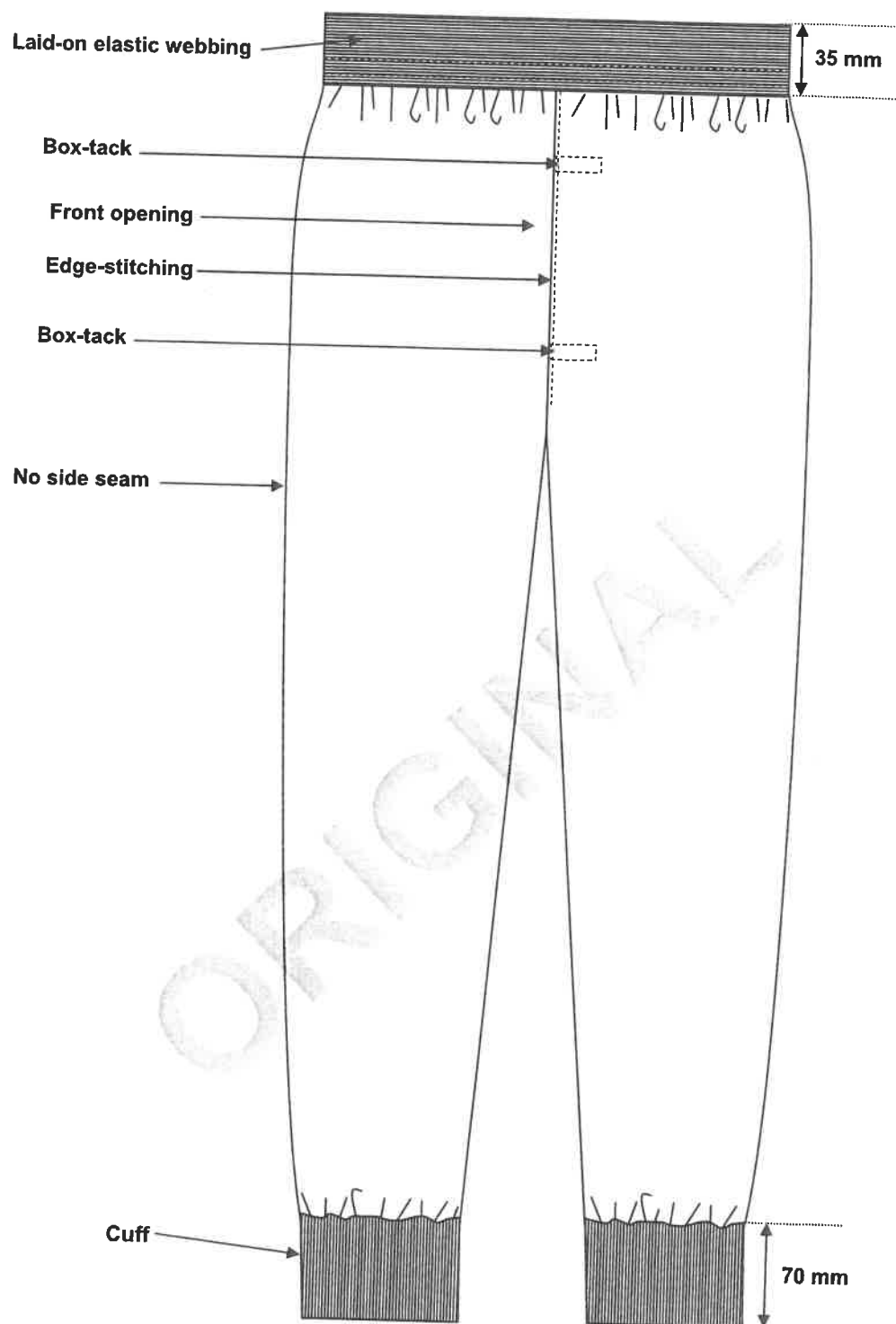


9.3 Bottoms

The bottoms of the long john shall:

- ◆ be fitted with double folded rib-knitted cuffs
 - of finished depth 70 mm (after it has been folded double and attached)

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10. Stitches, Seams and Stichings

10.1 Stitches

attaching elastic at the waist: cover stitch

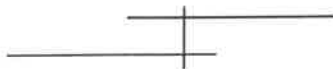
main seaming: three-thread overlocking stitch

other stitches: single needle lock stitch

10.2 Seams

Seams to be at least 10 mm wide (unless otherwise stated):

Attaching of elastic webbing: seam type LSa -2



Lap the edges of two or more plies of material for the specified distance and seam with the appropriate number of rows of stitches.

All other seams: seam type SSa



Superimpose two or more plies of material and seam with one row of stitches positioned at the specific distance(s) from the aligned edges.

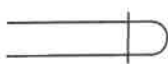
10.3 Stichings

Raw edges of front opening: stitching type EFd



Stitch over the edge of a ply of material with one row of stitches.

Folded edge of front opening: stitching type OSf-1



Fold a ply of material and stitch through the fold with the appropriate number of rows of stitches positioned at the specified distance(s) from the folded edge.

10.4 Number of stitches

The determination of sewing stitches per unit length: use SANS 5278 "Sewing stitches per unit length"

All stitches: 40 ± 4 per 10 cm

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11. Care-labelling and marking of each garment

11.1 Label properties (Care-labels and garment labels)






All labels shall:

- ♦ be white woven rayon labels that are printed
- ♦ comply with SANS 1309 "Printed labels for textiles"
 - information to be in legible and indelible block letters of height at least 3 mm
- ♦ permanently secured
- ♦ be such that they outlast the garments (including the markings)

11.2 Care-labelling

- ♦ Each garment to have a label that is permanently secured
 - to provide appropriate care instructions (in accordance with SANS 10011 "Care-labelling of textile piece-goods, textile articles and clothing" and table 4) in words and symbols
 - to provide the fibre composition of the fabric in accordance with the requirements of SANS 10235 "Fibre content labelling of textiles and textile products"

Table 4 – Care Instructions

	<i>Wash at 40°C maximum</i>
	<i>Do not bleach</i>
	<i>Do not tumble dry</i>
	<i>Cool iron 110°C maximum</i>
	<i>Do not clean professionally</i>

11.3 Marking

- ♦ Each long john to have, secured to the centre back on the inside, a label that provides the following information:
 - the National Stock Number
 - the size designation
 - the manufacturer's name or trade mark or both
 - the year of manufacture

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12. Packing and marking of packaging

12.1 Packing

12.1.1 The Long johns shall be:

- ♦ delivered in a commercially dry condition
- ♦ so packed that they will not be damaged in transit or in storage
- ♦ neatly folded and individually packed in a plastics envelope of suitable size and shape
- ♦ unless otherwise specified in the order or contract, acceptably packed (in units of 10) for transit in acceptable bulk containers that comply with the requirements of SALM 108 "Corrugated board boxes for clothing"

12.1.2 Long johns:

- ♦ of the same colour and size designation to be packed together in a bulk container (unless quantities ordered are such that packing together of the same size and colour only are not justified)
- ♦ of different colours and size designations may also be packed together to accommodate the last part of an order or contract

12.2 Marking of packaging

12.2.1 Plastics envelopes:

Each plastics envelope to be clearly marked with the following information:

- ♦ the designation, i.e. "Thermal long johns"
- ♦ the size designation
- ♦ the National Stock Number

12.2.2 Bulk containers:

Each bulk container shall be labelled as given in paragraph 11.2 of SALM 108 "Corrugated board boxes for clothing".

12.3 Additional marking

When so required by the South African Air Force, long johns, envelopes or containers (or any combination of these) to bear information additional to that specified above.

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13. Applicable Documents

The following documents contain provisions which, through reference in this text, constitute provisions of this specification. All documents are subject to revision and, since any reference to a document is deemed to be a reference to the latest edition of that document, parties to agreements based on this specification are encouraged to take steps to ensure the use of the most recent editions of the documents indicated below. Information on currently valid national, international and CKS documents may be obtained from Standards South Africa*.

AATCC test method 20, *Fiber analysis: Qualitative*. Available from World Wide Web

http://www.aatcc.org/Technical/Test_Methods/scopes/tm20.cfm

CKS 129, *Colours for textiles*.

SALM 108, *Corrugated board boxes for clothing*.

SANS 105-B02/ISO 105-B02, *Textiles – Tests for colour fastness – Part B02: Colour fastness to artificial light: Xenon arc fading lamp test*.

SANS 105-C10/ISO 105-C10, *Textiles – Tests for colour fastness – Part C10: Colour fastness to washing with soap or soap and soda*.

SANS 105-E04/ISO 105-E04, *Textiles – Tests for colour fastness – Part E04: Colour fastness to perspiration*.

SANS 142, *Narrow elastic fabrics and strip*.

SANS 960, *Textiles – Dimensional stability during washing and drying procedures*.

SANS 1309, *Printed labels for textiles*.

SANS 1362, *Sewing threads*.

SANS 5278, *Sewing stitches per unit length*.

SANS 5385, *Mass per unit area of conditioned knitted textiles*.

SANS 6103, *Linear density of yarns in weft-knitted fabrics*.

SANS 6104, *Stitch length of weft-knitted fabrics*.

SANS 10011, *Care-labelling of textile piece-goods, textile articles and clothing*.

SANS 10076-4, *The assessment of defects in textile piece-goods and made-up articles – Part 4: Defects in knitted piece-goods*.

SANS 10235, *Fibre-content labelling of textiles and textile products*.

SANS 10371, *Terms and definitions for clothing*.

* Standards South Africa: Tel. +27 (0) 12 4287911

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ANNEX A

(Normative)

Special conditions of tender

A-1 GENERAL

- A-1.1** Unless otherwise stated, the South African Bureau of Standards shall be the inspecting authority.
- A-1.2** Three pre-production sample long Johns shall have been inspected, tested and approved by the inspecting authority before bulk production is commenced. Each one of these samples shall be accompanied by a trim chart containing a sample of each component material (as given in 6.2 to 6.4) and the relevant certificates. It shall be the duty of the manufacturer to give adequate notice to the inspecting authority of the availability of these samples.
- A-1.3** The long Johns shall be subject to inspection during the course of manufacture. The inspector shall, during normal working hours, be given all reasonable facilities for carrying out his duties and shall have the right of entry into the contractor's factory and the factory or works of any subcontractor where work on long Johns supplied to this specification may be in progress.
- A-1.4** The contractor shall inspect the finished long Johns for compliance with the specification before submitting them to the inspecting authority for final inspection.
- A-1.5** Before acceptance, the long Johns shall have been inspected and tested by the inspecting authority and found to comply with the requirements of the specification.

A-2 DOCUMENTATION

One container of each consignment shall be marked "DOCUMENTS" and in addition to the long Johns, shall contain the following:

- a) The packaging slip or delivery note;
- b) where applicable the inspection certificate(s);
- c) a copy of the invoice containing the following information:
 - the order number
 - the financial authority number
 - a full description of the consignment, i.e. National Stock Number, quantity, etc

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ANNEX B

(Normative)

CKS 129 Colours

Due to the fact that colours can change over a period of time, any colour standard which has been registered for a period of SEVEN YEARS or more shall be considered obsolete. These standards shall then be allocated an archived status (as opposed to current status) and re-registration shall be required.

A. The following scenarios require a submission of three metres of fabric from the successful tenderer:

1. A colour standard is archived.
2. First time registration is required (CKS 129 colour number does not exist).
3. Colour swatch stock at the SABS is no longer available.

B. Requirements regarding the submission of fabric as Identified in A:

1. The colour shall be as agreed upon between the South African Air Force and the successful tenderer.
2. The fabric shall be used to make new colour swatches which shall be the responsibility of the SABS.
3. The cost of the three metres of fabric shall be incorporated in the relevant tender submission.

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HISTORY SHEET				
DOC ISSUE	DATE	AMENDMENTS/HISTORY	CHECKED	
			NAME	INIT.
1		First release		
2	August 1997			
3	June 2008	a) Updated format, references and layout of spec. b) Included fabric (knitted fabric and cuffs) requirements in spec. c) Add reference to a 2 nd colour, i.e pine green. d) Add Annex B. e) Amend size chart. f) Add measuring points. g) Add care-instructions as received from manufacturer. h) Change reference of bulk container labelling.		

ORIGINAL

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Enclosure b



ARMSCOR

DOCUMENT NUMBER : 05181-100-013
ISSUE DATE : FEBRUARY 2005

Specification for Thermal T-Shirt, Short Sleeves

SUMMARY : T-shirt, Thermal, Short Sleeves

DATE OF ORIGINAL ISSUE : April 2000


KEYWORDS : T-shirt, Thermal, Short Sleeves

APPROVAL PAGE

Compiled by:


SAAU PS Team

Approved by:


Ms M Jordaan
Manager: Clothing System
Armcor

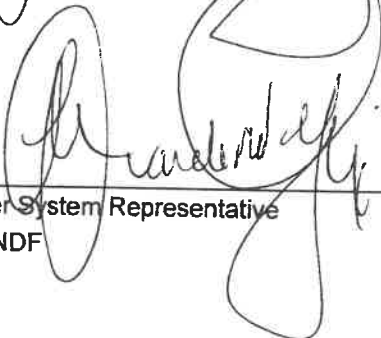
4/4/2005
Date

Approved by:


PS Manager: SAAU System
SA Army

060405
Date

Approved by:


User System Representative
SANDF

060405
Date

AMENDMENT HISTORY

DOC ISSUE	DATE	AMENDMENTS	DOC CHANGE PROPOSAL NO.	CHECKED	
				NAME	INIT.
1	04-2000	Document renumbered and cover page added, superseding RSA-MIL-SPEC-210	N/A	J Billingham	
2	01-2002	1.Spec converted to MS Word; 2. Added neck width, neck depth and cuff width to size chart (see 3.2.2); 3.Added information to 3.2.4.3 (see (c) and (d); 4. Added trim chart requirements (see 4.1.4.1); 5. Included measuring points (see Appendix 30); 4. Added reference to SABS 0235 (see 3.1.3.1); 6. Replaced illustration (see Appendix 10);	25303	KC v Deventer	
3	10-2002	Add garment and care labelling information (3.1.3); Deleted specific care instruction (3.1.3.2); Add colour of material (3.2.4.2); Add footnote with regards to colour re-igstration; Add information to plastics enveloped (5.2.1) and bulk containers (5.2.2); Remove label from Appendix 1, Figure 1	25402	ECP Fouche	
4	02-2005	Add reference to SANS 10076 (2.3.1), and changed all SABS references to SANS; Change chest measurements in size chart (see 3.2.2); Add footnote no.3 in size chart (see 3.2.2) Changed the CKS 129 colour references (see 3.2.4.2); Deleted references to black T-shirts (see 3.2.4.2) and colour (see 5.1 and 6.1.2) Changed the fibre composition of the rib fabric (see 3.2.4.2 (b)); Include reference to flat lock stitch and cover seam stitch (see 3.2.4.5 (a) and (c)); Changes as per standard Checklist	25423 26085 26155 27027	J Billingham	

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FOREWORD

This specification sets forth the materials required for, and the method of construction to be used, in the manufacture of short sleeved thermal T-shirts.

The specification is arranged in 6 sections and two appendices. Section 1 states the scope of the specification. Section 2 lists the applicable documents. Section 3 details the requirements for the product, the materials, the method of manufacture and standards of workmanship. Section 4 details the qualification procedures, the quality assurance provisions, test methods and acceptance inspection procedures. Section 5 details the preparation of the product for delivery. Section 6 contains definitions and notes on special requirements and documentation.

1. SCOPE

This specification covers the performance, design, manufacture, test and acceptance requirements of short sleeved thermal T-shirts for the personnel of the South African Army.

2. APPLICABLE DOCUMENTS

The following documents contain provisions which, through reference in this text, constitute provisions of this specification. All documents are subject to revision and, since any reference to a document is deemed to be a reference to the latest edition of that document, parties to agreements based on this specification are encouraged to take steps to ensure the use of the most recent editions of the documents listed below. Information on currently valid national, international and CKS documents may be obtained from Standards South Africa and on RSA-MIL-SPECs from the Bureau for RSA Military Standards (BRMS).

2.1 Government documents

05181-100-023, *Thermal-wear fabric*

CKS 129, *Colours for textiles*

RSA-MIL-SPEC-296, *Corrugated board boxes for clothing and footwear*

2.2 Armscor documents

This section is not applicable to this specification.

2.3 National and international documents

2.3.1 Specifications

SANS 1309, *Printed labels for textiles.*

SANS 1362, *Sewing threads.*

SANS 10004 (SABS 04), *Terms and definitions for textiles and textile merchandise.*

SANS 10011(SABS 011), *Care-labelling of textiles and clothing.*

SANS 10076-4, *The assessment of defects in textile piece-goods and made-up articles Part 4: Defects in knitted piece-goods.*

SANS 10101 (SABS 0101), *Standard nomenclature for stitches, seams and stitchings.*

SANS 10188: 2002 (SABS 0188), *Standard methods of garment measurement.*

SANS 10235 (SABS 0235), *Fibre content labelling of textiles and textile products.*

2.3.2 Test methods

SANS 5278 (SABS SM 278), *Sewing stitches per unit length.*

2.4 Other documents

Master Record Index (MRI) 05181 - B00000 - 550001 for Underwear Patterns
(Thermal T-shirt, short sleeves).

3. REQUIREMENTS

3.1 Product definition

Short sleeved T-shirt with thermal properties.

3.1.1 Major components list

3.1.1.1 Knitted fabric

3.1.1.2 Sewing thread

3.1.2 Interface

This section is not applicable to this specification.

3.1.3 Identification and marking

3.1.3.1 T-shirts

Each garment shall have a white woven rayon label, that complies with the requirements of SANS 1309, securely sewn to the right hand side seam, 5 cm above the bottom hem on the inside of the garment. This label shall show the following in legible and indelible block letters of height at least 3 mm:

- (a) The National Stock Number (NSN);
- (b) The size designation;
- (c) The manufacturer's name or trade mark or both;
- (d) The year of manufacture;
- (e) The words "STATE PROPERTY NOT FOR SALE"; AND
- (f) Space for the wearer's name with the following working: "Name: _____".

3.1.3.2 Care labelling

Each garment shall have a printed label (that complies with SANS 1309), securely sewn to the side right hand side seam, 5 cm above the bottom hem on the inside of the garment, that provides correct and appropriate care instructions (in words and symbols, in accordance with SANS 10011). This label shall also include the fibre composition of the main fabric (in accordance with SANS 10235). All care labels and their markings shall be such that they outlast the garments.

3.1.3.3 Packaging

See 5.2 for marking of packaging.

3.1.4 Client furnished materials

All patterns, where available, will be supplied to the manufacturer by the purchasing authority for the duration of the contract.

3.2 Characteristics

3.2.1 Performance characteristics

If the correct size designation has been selected, the T-shirts shall be an acceptable fit without restricting movement to the wearer.

3.2.2 Physical characteristics

The T-shirts shall be supplied in one or more of the size designations given in column 2 of table 1, as specified in the order or contract, and their measurements, determined (where applicable) by the relevant methods given in SANS 10188, Category H, shall conform to the appropriate values given in columns 3 to 8.

TABLE 1 - SIZE RANGE

1	2	3	4	5	6	7	8
National Stock Number	Size Designation ¹⁾	Nominal finished garment measurements, cm					
		Chest	Length ²⁾	Sleeve length ³⁾	Neck width	Neck drop	Cuff circumference
180181707	99-070	59	73	12	18,5	7,5	32
180181688	99-080	66	75	12	20	7,5	32,8
180181708	99-090	76	78	12	22	7,5	33,6
180181704	99-100	86	80	12	23,5	7,5	34,6
180012955	99-110	96	82	12	24	7,5	35,4
180015962	99-120	106	85	12	25	7,5	36,4
181188026	99-130	116	87	12	25,5	7,5	37
1) The size designation indicates the height and the chest of the intended wearer, e.g 99-110 tall figure 99, chest 110.							
2) Measured from the centre back neck-to-rib seam to the outer edge of the bottom hem.							
3) Measured along the underarm seam, from the base of the scye to the outer edge of the cuff.							

3.2.3 Maintainability

The T-shirts shall be cleaned and maintained according to the care instructions label (see 3.1.3.2).

3.2.4 Design and construction

3.2.4.1 Design

The T-shirt shall have a round neck and short set in sleeves. The bottom edge of the body shall be hemmed.

3.2.4.2 Materials

The materials specified in 3.2.4.2(a) to 3.2.4.2(c) shall be supplied and used by the manufacturer.

(a) Knitted fabric

The knitted fabric shall comply with the requirements of Spec No 05181-100-023 and shall be of a colour that is a match, in terms of SANS 10076-4, to colour No. 87c "Pine green (thermal wear)" of CKS 129.

(b) Rib fabric

A 1 x 1 rib-knitted fabric made from 100% spun polyester yarns and the colour shall be an acceptable match to the colour of the knitted fabric (see 3.2.4.2(a)).

(c) Sewing thread

The sewing thread shall comply with the relevant requirements of SANS 1362 and shall be a polyester-and-cotton core-spun thread, ticket No. 120. The colour shall be an acceptable match to the colour of the knitted fabric (see 3.2.4.2 (a)).

3.2.4.3 Drawings and patterns

(a) Sketch for this T-shirt appears in Appendix 1.

(b) Patterns are available from the Procurement Authority on request against MRI 05181 – B00000 - 550001 (Thermal T-shirt, short sleeves).

(c) This pattern makes provision for 10 mm seam allowance throughout.

3.2.4.4 Construction

NOTE - Unless inconsistent with the text all measurements are nominal.

(a) Body

The body shall consist of two parts (i.e. a front and a back) that are seamed together at the sides and shoulders. The lower edge of the body shall be turned under and hemmed 20 mm. Each shoulder shall be stayed on the inside with a 15 mm wide strip of self material that is sewn in with the shoulder seam.

(b) Neck opening

The neck opening shall be round and shall be finished off with rib fabric (see 3.2.4.2(b)) of finished depth 25 mm (after it has been folded double and sewn to the neck opening).

(c) **Sleeves**

The sleeves shall be one-piece short set-in sleeves that are seamed under the arms. The ends of the sleeves shall be turned under and hemmed 20 mm.

3.2.4.5 Special requirements

The stitches, seams and stitchings shall be in accordance with SANS 10101 and shall be as follows:

(a) **Stitches**

1. **Bottom hem and cuffs:** Stitch type 402 (cover seam stitch) or type 606 (flatlock stitch); and
2. **All other sewing:** Stitch type 504 or other acceptable type of overlocking stitch.

(b) **Seams**

Seam type SSa.

(c) **Stitchings**

Stitching type EFa.

(d) **Number of stitches**

All stitches shall be 40 ± 4 per 10 cm.

3.2.4.6 Standard of manufacture

The T-shirts shall comply with the specification and the standard of manufacture shall be at least equal to the approved pre-production sample (see 4.1.4.1) for uniformity of make, colour and finish.

3.2.4.7 Workmanship

The T-shirts shall be free from defects that affect their appearance or may affect their serviceability (or both), and from marks, spots and stains incurred in the making up. All seams shall be smooth and all stitching uniform and free from twists, pleats and puckers and shall be sufficiently extensible to obviate seam cracking and undue shrinkage in use. All ends of sewing shall have been trimmed and loose threads removed.

3.2.4.8 Qualification and pre-production

This section is covered in section 4.1.4.1 of this specification.

3.2.4.9 Standard samples

Standard samples are held by, and may be viewed at the Procurement Agency.

4. QUALITY ASSURANCE PROVISIONS

4.1 General

The Inspection Authority shall be specified in the contract.

4.1.1 Quality management system

The contractor shall maintain a quality management system which shall assure that all items supplied in accordance with this specification, comply with it in all respects. The Procurement Authority shall have the right to call for periodic audits of the contractor's management of quality.

4.1.2 Responsibility for inspection and testing

The contractor shall inspect the finished T-shirts for compliance with the specification before submitting them to the Inspection Authority for final inspection.

4.1.3 Special tests and examinations

This section is covered in section 4.1.4.1 and 4.2.3 of this specification.

4.1.4 Classification of inspection

4.1.4.1 Pre-production sample inspection

Three pre-production sample T-shirts shall be submitted to the Inspection Authority for testing and approval. These samples shall each be accompanied by a trim chart containing a sample of the component material (as given in 3.2.4.2 (c)) and the relevant certificates. When accepted, three samples shall be sealed. One sample shall be retained by the Inspection Authority, one sample shall be returned to the contractor and one sample shall be sent to the Procurement Authority. Bulk production shall not commence until the sealed and approved pre-production sample is received by the contractor.

4.1.4.2 In process inspection

The T-shirts shall be subject to inspection during the course of manufacture. The inspector shall, during normal working hours, be given all reasonable facilities for carrying out his duties and shall have the right of entry into the contractor's factory and the factory or works of any subcontractor where work on T-shirts supplied to this specification may be in progress.

4.1.4.3 End item inspection

Before dispatch, the T-shirts shall have been inspected and tested by the Inspection Authority and found to comply with the requirements of the specification before issuing a release certificate.

4.1.5 Calibration of test and measuring equipment

This section is not applicable to this specification.

4.1.6 Quality records

Records of all certificates, checks and tests required in terms of this specification, in a form acceptable to the Inspection Authority, shall be kept by the contractor and shall be available to the Inspection Authority.

4.2 Quality conformance inspection

4.2.1 Certificate of compliance (C of C)

The contractor manufacturing the T-shirts shall provide evidence that the product being supplied complies with the requirements of the specification and shall be covered by a certificate of compliance. If such evidence is not available, samples shall be required for clearance and all costs incurred shall be for the contractor's account.

4.2.2 Classification of defects

Any defect or combination of defects or deviations from the specification that render the T-shirts unacceptable, or are such that the T-shirts cannot be issued (see 6.4).

Defects such as listed in but not limited to Appendix 2.

4.2.3 Test methods

4.2.3.1 Final inspection

Visually examine and measure each T-shirt in the sample for compliance with 3.2.2 and 3.2.4.1 and all the applicable requirements of section 3.2.4.4 for which tests to assess compliance are not given in 4.2.3.2 and 4.2.3.3.

4.2.3.2 Sewing stitches per unit length

Use SANS 5278.

4.2.3.3 Properties of materials

Use the methods specified in the relevant material specification.

5. PREPARATION FOR DELIVERY

5.1 Packaging and preservation

The T-shirts shall be delivered in a commercially clean and dry condition and shall be so packed that they will not be damaged in transit or storage. Unless otherwise specified in the order or contract, each T-shirt shall be so folded and neatly packed in a plastics envelope (of suitable size and shape) that the garment label details are clearly visible, and the packed for

transit in bulk containers complying with the requirements of RSA-MIL-SPEC 296. Only T-shirts of the same size shall be packed together in a bulk container (unless quantities ordered are such that packing together of the same size only is not justified). T-shirts of different sizes may also be packed together to accommodate the last part of an order or contract.

5.2 Marking of packaging

5.2.1 Plastics envelope

Each plastics envelope shall be marked as follows:

- 5.2.1.1 The National Stock Number (NSN);
- 5.2.1.2 The size designation; and
- 5.2.1.3 The item description, i.e "Thermal T-shirt, short sleeves".

5.2.2 Bulk containers

In addition to the address for delivery, each bulk container shall be labelled with the following information:

- 5.2.2.1 The National Stock Number (NSN);
- 5.2.2.2 The size designation;
- 5.2.2.3 The item description i.e. "Thermal T-shirts, short sleeves";
- 5.2.2.4 The manufacturer's name or trademark;
- 5.2.2.5 The year of manufacture;
- 5.2.2.6 The order/line number;
- 5.2.2.7 The batch number or date of manufacture;
- 5.2.2.8 The quantity;
- 5.2.2.9 The mass of the packed container; and
- 5.2.2.10 The FIFO colour label indicating the year of manufacture (the colour will be identified by the Procurement Authority).

5.3 Additional markings

When so required by the SA Army, T-shirts or envelopes or containers, or any combination of these three, shall bear information additional to that specified in 3.1.3, 5.2 and 6.2.

6. NOTES

6.1 General

The following requirements will be specified in tender invitations and in each order or contract:

- 6.1.1 The Inspection Authority;
- 6.1.2 The packing, if other than as specified (see 5.1);
- 6.1.3 Additional marking, if required (see 5.3); and
- 6.1.4 The National Stock Number (NSN).

6.2 Documentation

One container of each consignment shall be marked "Documents" and shall, in addition to the T-shirts, contain the following:

- 6.2.1 Packing slip/delivery note;
- 6.2.2 Where applicable, the inspection certificate(s); and
- 6.2.3 A copy of the invoice containing the following:
 - 6.2.3.1 The order number;
 - 6.2.3.2 The financial authority number; and
 - 6.2.3.3 A full description of the consignment, e.g. items, size(s), quantity, etc.

6.3 Definitions

For the purposes of this specification the relevant definitions given in SANS 10004 and the following definitions apply:

Acceptable: Acceptable to the SA Army and/or the Procurement Authority.

Nominal: Subject to the tolerances normal to good manufacturing practice.

6.4 Final Inspection

The sampling plan, sample size, classification of defects and sentencing criteria, shall be finalized during the manufacturing of the pre-production samples. Bulk production shall not commence until these aspects are cleared and documented.

APPENDIX 1: SKETCH FOR THERMAL T-SHIRT, SHORT SLEEVES

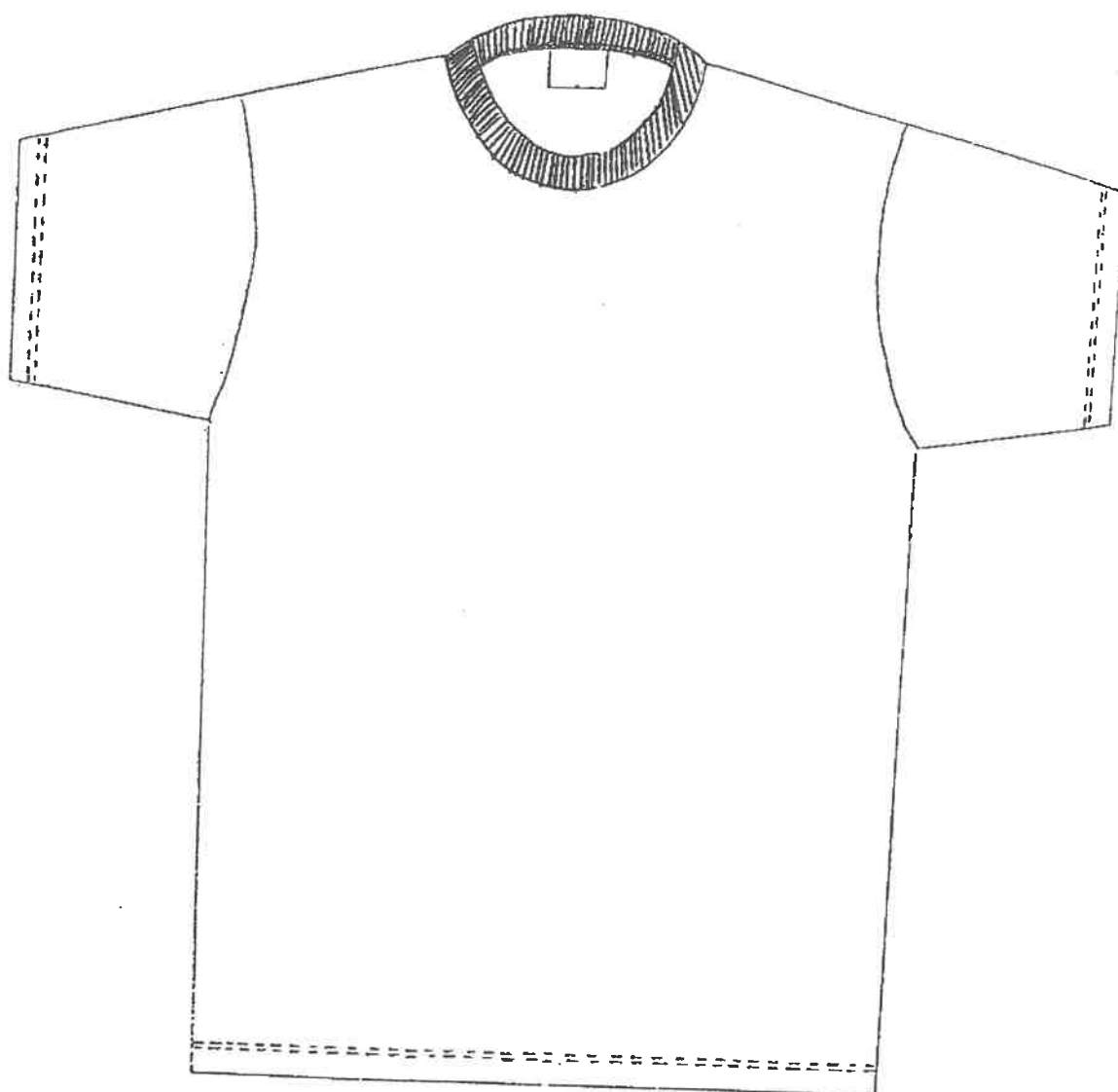


FIGURE 1 – THERMAL T-SHIRT, SHORT SLEEVES

PLEASE NOTE: ILLUSTRATIONS ARE NOT TO SCALE AND FOR GUIDANCE ONLY.

APPENDIX 2: DEFECTS

Points not defined in the specification that require assessing at inspection.

2.1 The appearance must be neat and clean.

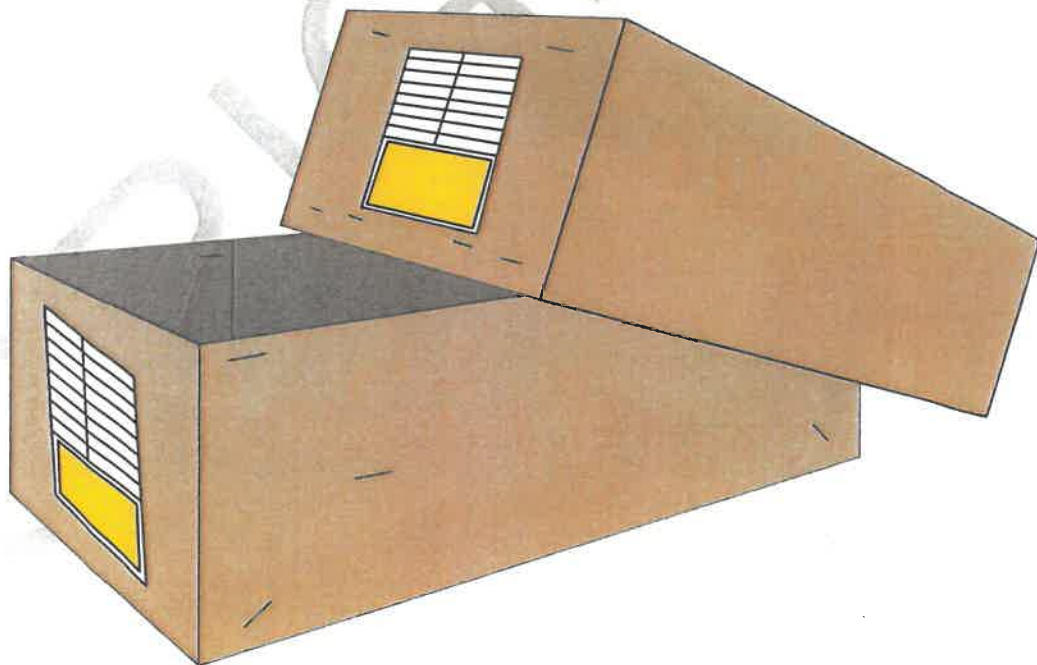
PRIVATE SPECIFICATION

Prepared for the

SOUTH AFRICAN AIR FORCE



**Corrugated Board Boxes for Clothing
(Telescopic Type)**



SALM 108

Version 07.0/January 2023

1. Scope

This specification covers the requirements for the material, design, dimensions, and physical properties of corrugated board components (inner and outer) of telescopic type corrugated board boxes used for packing clothing and footwear for personnel of the South African Air Force.

2. Definitions and Abbreviations

For the purpose of this specification the following definitions shall apply:

where relevant: the definitions given in SANS 431 and SANS 456

acceptable: acceptable to the South African Air Force

FIFO: First in, First out

nominal: subject to the tolerances normal to good manufacturing practice

IFCC: International Fibreboard Case Code

inner component: a component that has sides, ends, and a bottom but no top

outer component: a component that has sides, ends and top but no bottom and that fits telescopically over the inner component

SANS: South African National Standard

3. Style

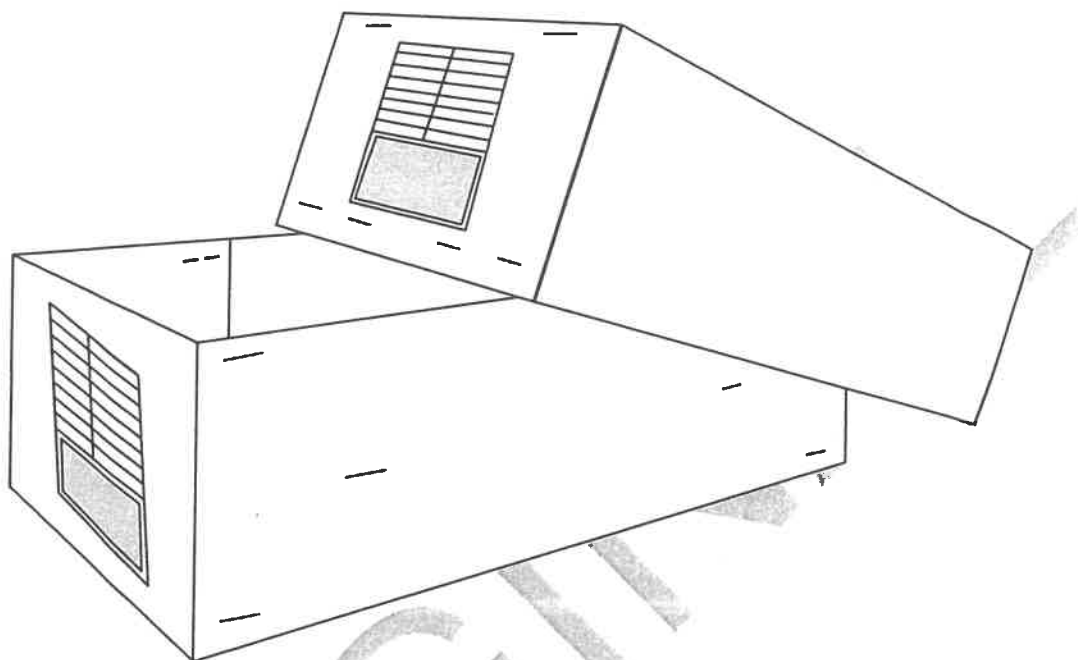
The style is as follows:

- ♦ IFCC style No. 0301
- ♦ telescopic type
- ♦ having an inner and an outer container

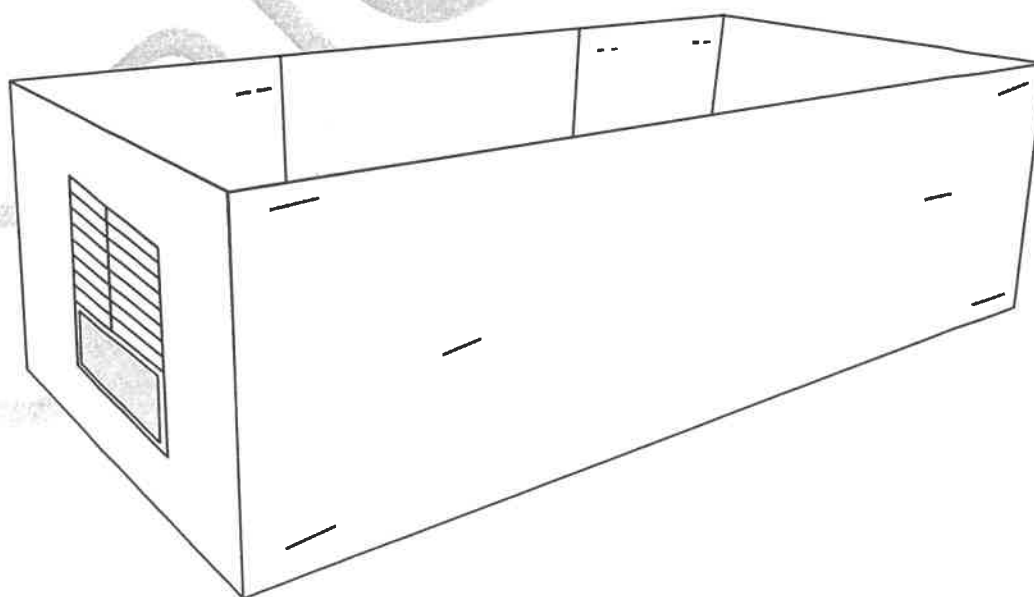
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4. Illustrations

Illustrations are not to scale and are for guidance only.

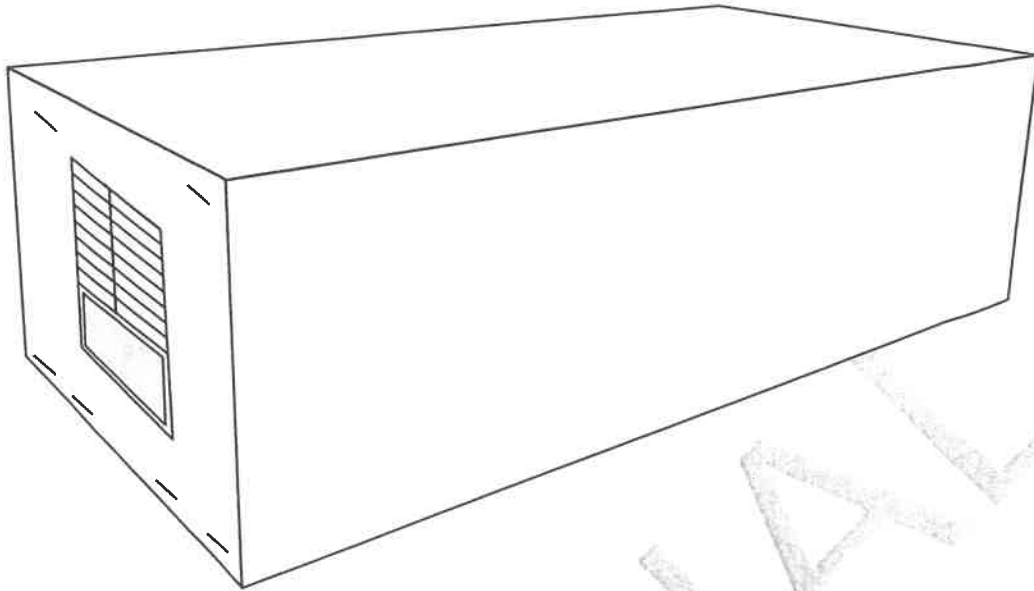


**Figure 1 – Base and lid components of telescopic cardboard box
(assembled and ready to serve as a container for storage of finished goods)**



**Figure 2 – Base component of telescopic cardboard box
(assembled and ready to serve as the base of a container for storage of finished goods)**

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**Figure 3 – Lid component of telescopic cardboard box
(assembled and ready to serve as the lid of a container for storage of finished goods)**

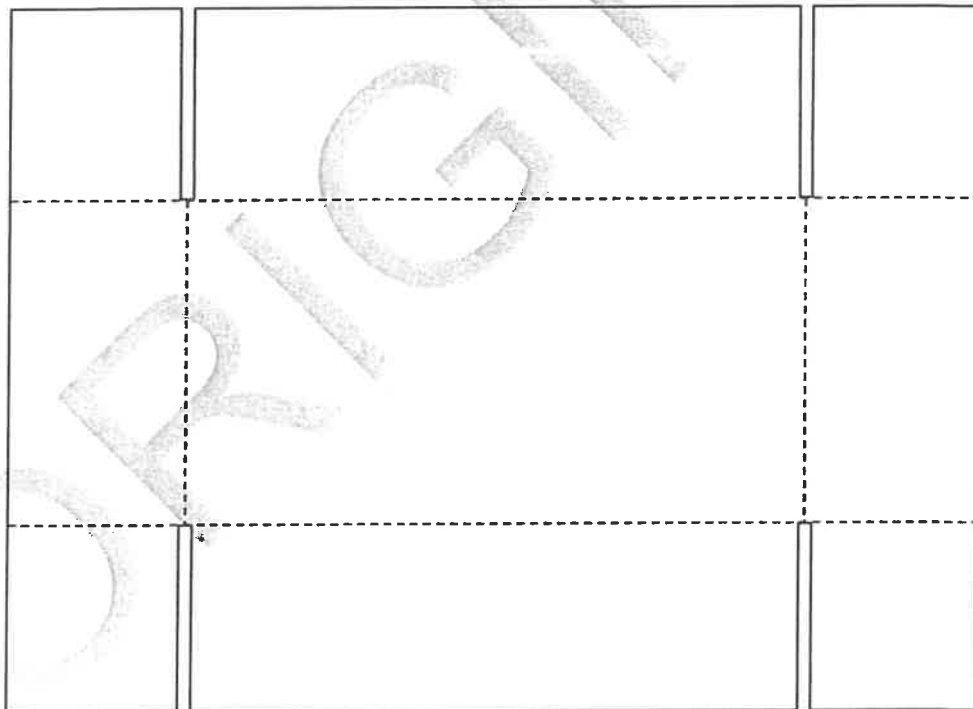


Figure 4(a) – Design of telescopic cardboard box when unassembled (Base component)

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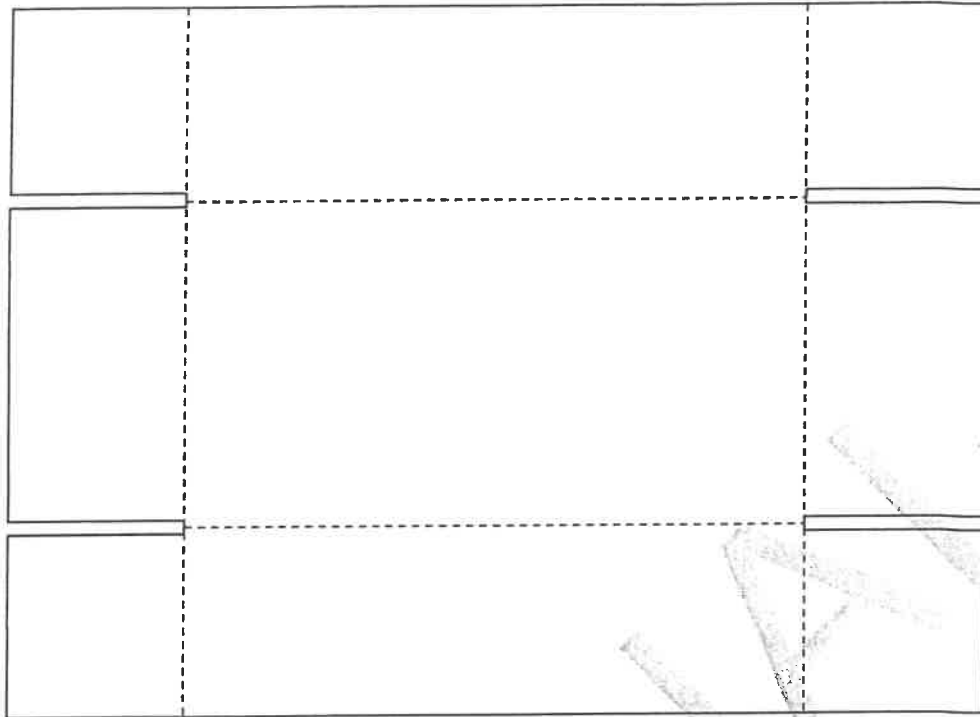


Figure 4(b) – Design of telescopic cardboard box when unassembled (Lid components)

5. Client Furnished Materials

No materials will be supplied by the South African Air Force.

6. Physical and Performance Requirements

The corrugated board boxes shall comply with the following physical characteristics.

6.1 Paper

- ♦ paper shall be manufactured from processed cellulose fibre and shall be reasonably free from defects as listed in section 7
- ♦ the relevant surfaces of the paper shall be such as to accept the adhesives commonly used in the manufacture of corrugated board

6.1.1 Fluting and liners

- ♦ to comply with the requirements of SANS 431 "Liners and fluting for corrugated board" for the relevant types (grammage) as specified in table 1
- ♦ grammage of the fluting and liners of the inner and outer component parts to comply with the requirements as given in table 1
 - the nominal grammage values given in table 1 are subject to a tolerance of $\pm 5\%$

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Table 1 – Grammage of fluting and liners

1	2	3
Property	Requirement	Test Method ^a
Grammage, g/m ² , min.	935 ^b	ISO 536
Damp-ply adhesion (B and C flute), N/m.	400 ^c	See 10.2
Water absorption of facing g/m ² after 30 min. max (outer and inner) .	120 ^b	See 10.3
Thickness, mm, min.	6,0 ^c	See 10.4
Bursting strength, kPa, min.	1700 ^c	ISO 2758
^a Condition all specimens and test pieces in accordance with ISO 187, using the conditioning atmosphere 23/50. See also 10.1. ^b The average of two determinations (one specimen from each of two components) to be reported . ^c The average of six determinations (two specimens from each of three components) to be reported.		

6.1.2 Corrugated board

- ♦ to be wet-strength double wall simplex corrugated board of C and B fluting construction
- ♦ to comply with the requirements as given in table 2
- ♦ the direction of the corrugations in the sides of the inner and outer components shall be parallel to the direction of the stacking load (refers to closed and assembled boxes)

Table 2 - Physical Properties of Corrugated Board

1	2	3	4	5	6
Component	Nominal grammage, g/m ²				Test Method
	Liners			Fluting B and C	
	Inner	Centre	Outer		
Inner	230	160	230	125	ISO 536 ^a
Outer	230	160	230	125	

^a Condition all specimens and test pieces in accordance with ISO 187, using the conditioning atmosphere 23/50. Determine the average actual grammage, but use 20 test pieces.

6.2 Adhesives

- ♦ the adhesives used in making corrugated board and in the construction of the box shall not have any deleterious effect on the intended contents of the container

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6.3 Dimensions and design

- ♦ IFCC style No. 0301 as given in Annex B of SANS 456:2009 "Corrugated board containers"
- ♦ dimensions to comply with the requirements as given in section 8

6.4 Creasing

- ♦ the creasing of the board shall be such that when a box is tested in accordance with paragraph 10. 5, there is no splitting of any liner
- ♦ the creasing of the board shall be such that when a component is assembled, there shall be no splitting of any liner
- ♦ there shall be no overlap of the flaps when each component is assembled

6.5 Staples

- ♦ staples shall be of a steel wire
- ♦ the wire shall have a coating (such as zinc, tin, copper, or enamel) that is not readily removable by the stapling process
- ♦ the staples shall have a nominal crown length of 30 mm, and each leg shall be long enough to be clinched on the inside of the board for a length of at least 7 mm

6.6 Storage requirements

- ♦ dry storage for a period not exceeding 15 months under the following conditions:
 - Temperature range: - 10° to 50°
 - Humidity: Maximum 50% relative humidity; Minimum 25 % relative humidity
- ♦ the components shall, before delivery, be stored in such a manner that they are reasonably protected from adverse atmospheric conditions and from fungal and insect attack

6.7 Transport requirements

- ♦ suitable for rail, road and air transport

6.8 Durability requirements

- ♦ single journey use

6.9 Strapping

- ♦ acceptable polypropylene strapping of nominal width 10 – 12 mm
- ♦ manufactured in accordance with high grade commercial practice

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7. Workmanship

The box component parts to be:

- ◆ cut and made with first-class workmanship throughout
- ◆ of uniform and acceptable make and finish

To be free from:

- ◆ defects, such as listed below or any other imperfection that affect their serviceability
 - fibre bundles, holes, splinters, specs and breaks

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8. Dimensions

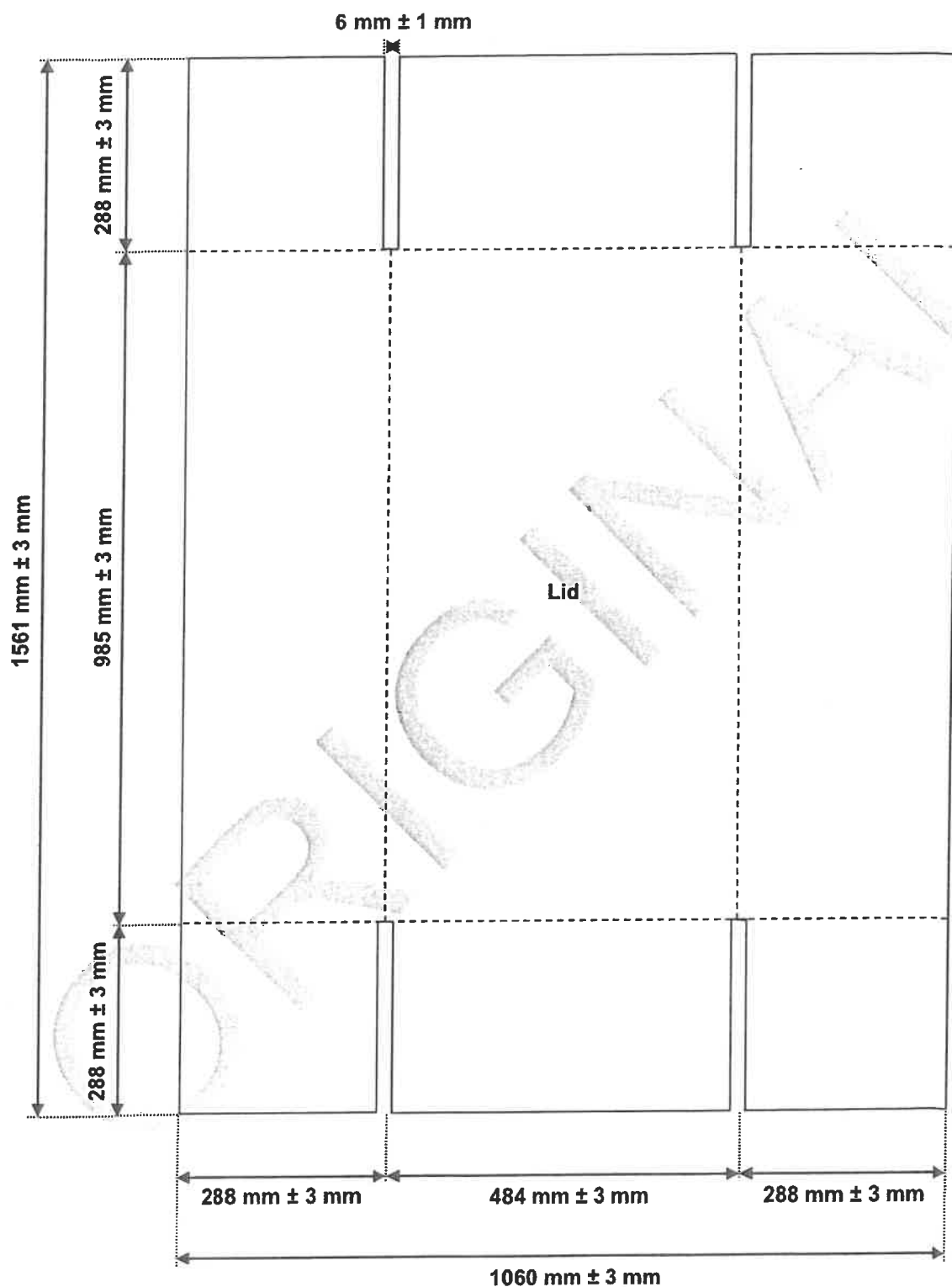


Figure 5 – Dimensions of the lid component of the telescopic board box (flat measurements)

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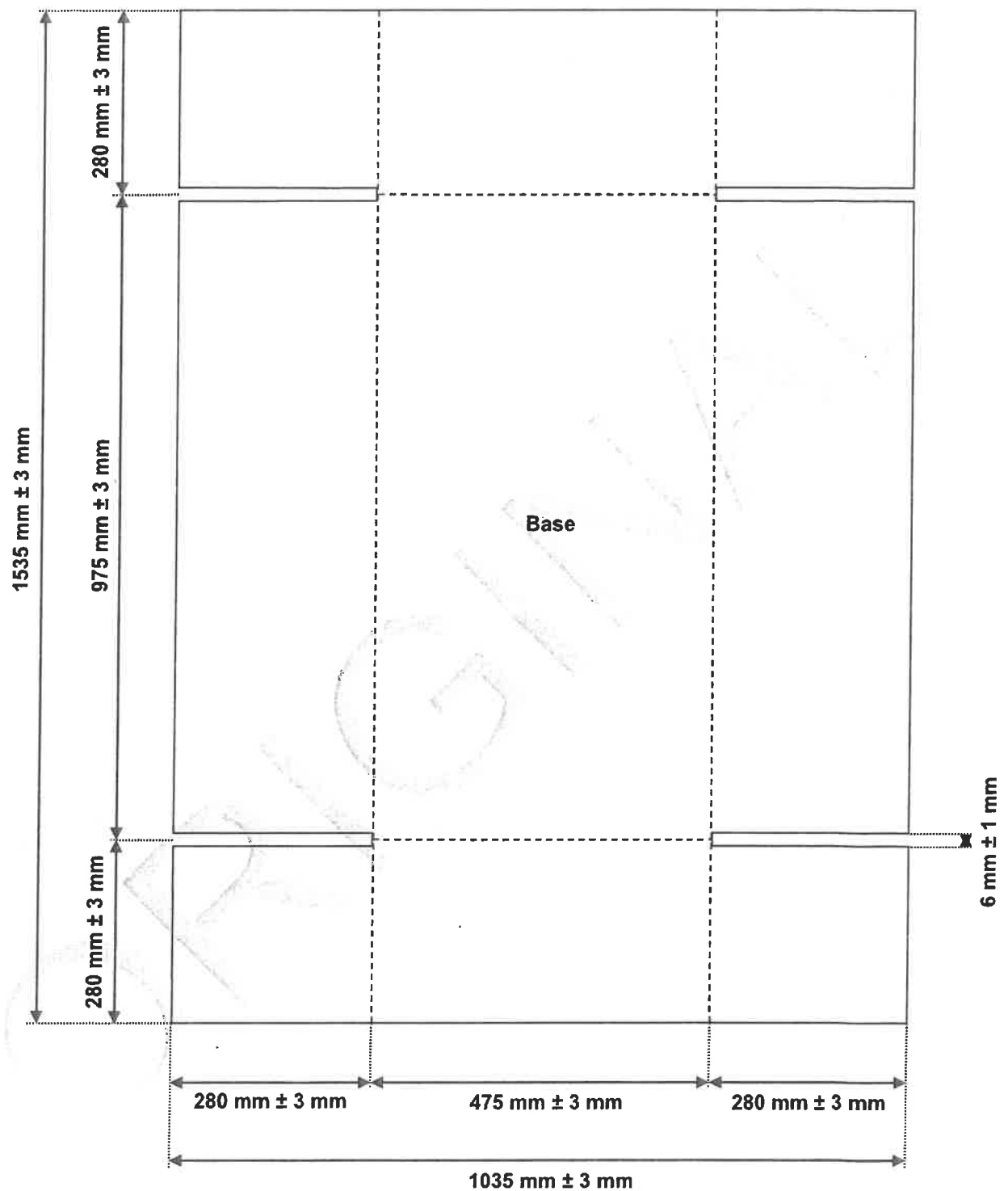


Figure 6 – Dimensions of the base component of the telescopic board box (flat measurements)

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9. Assembly/Securing of boxes

Unless inconsistent with the text, all measurements are nominal.

9.1 Stapling

- ♦ each joint shall be stapled (see 6.5) with a minimum of three staples if the crown length is 30 mm (min).
 - in instances where the crown lengths of the staples are less than 25 mm, a minimum of five staples shall be required to secure the joints
- ♦ staples shall not commence more than 25 mm away from each end of a joint, and shall be adequately clinched

9.2 Strapping of boxes

- ♦ once packed, each corrugated box (base and lid unit) shall be secured with at least three lengths of strapping, i.e. two in the width and one in the length
- ♦ secured by means of metal clasps or a fusing technique (as relevant) in such a way that it shall not come undone by itself (to withstand transportation, stacking, handling and storage)
- ♦ tensioning to be such that after it is permanently secured, the strapping shall not cause any damage to the contents of the container

10. Test methods

10.1 General

10.1.1 Test specimens

- ♦ unless otherwise stated, take test specimens from areas of the board that are uncreased and undamaged and, where possible, from different units in the sample

10.1.2 Conditioning

- ♦ unless otherwise stated, condition, inspect, and test all specimens in a controlled atmosphere that, has a relative humidity of $50\% \pm 2\%$ and a temperature of $23\text{ °C} \pm 2\text{ °C}$
- ♦ during conditioning, position each specimen so that all surfaces are freely exposed to the conditioning atmosphere
- ♦ ensure that the air of the conditioning and testing laboratories is so circulated that the humidity and temperature are uniform throughout the laboratory
- ♦ allow sufficient conditioning time for the moisture content of the specimens to attain equilibrium with the conditioning atmosphere

NOTE - In cases of doubt determine the mass of each specimen at hourly intervals until the results of the last two determinations do not differ by more than 0,25 % of the final mass. For preference, approach equilibrium from the dryer condition.

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10.2 Test method for damp-ply adhesion

- ♦ test in accordance with paragraph 6.13 of SANS 456:2009 "Corrugated board containers"

10.3 Test method for water absorption of outer facing of board

- ♦ determine the average water absorption of the top side of a liner in accordance with ISO 535, "Paper and board -- Determination of water absorption – Cobb method", but use 6 test pieces, a testing time of 30 minutes and water at a temperature of $23^{\circ}\text{C} \pm 1^{\circ}\text{C}$
- ♦ omit the rejection of test pieces that have been saturated with water
- ♦ in cases where the test result exceeds 150 g/m^2 , report the result at $150 + \text{g/m}^2$

10.4 Test method for determining thickness (calliper) of corrugated board

- ♦ test in accordance with paragraph 6.8 of SANS 456:2009 "Corrugated board containers"

10.5 Accuracy and degree of creasing of corrugated board

- ♦ test in accordance with paragraph 6.14 of SANS 456:2009 "Corrugated board containers"

11. Packing, Labelling and Documentation of Goods

NOTE: This section covers the packaging, labelling and documentation of manufactured goods that are to be packed into containers as specified in this specification.

11.1 Packing

- ♦ items to be packed in containers made in accordance with this specification
- ♦ stapling and strapping to comply with the requirements as given in section 9
- ♦ containers to be sealed with 50 mm broad tape
- ♦ quantities as given in Annex A to serve as a guideline

11.2 Labelling

Each bulk container shall have a label securely attached to the outside of one of the short sides of the lid (upper component) and one label securely attached to one of the short sides of the base (lower component). The labels shall be visible when the containers are stacked and shall provide the following information in legible and indelible block letters:

- ♦ to be at least A5 paper size and markings to be in the following sequence (see fig 7):
 - the order number
 - the National Stock Number (NSN)
 - the item description
 - the size designation
 - the quantity
 - the colour (only if product is supplied in more than one colour)
 - the gross mass of the packed container
 - the year of manufacture
 - FIFO colour coded system as given in figure 8 (printed block)

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- ♦ minimum letter height of 18 pt. ARIAL
- ♦ left column: all CAPITAL LETTERS
- ♦ right column: Capitalize first letter of each word

11.3 Documentation

One container per consignment marked "DOCUMENTS" is to accompany each consignment with the following:

- ♦ the packaging slip/delivery note
- ♦ the inspection certificate (where applicable)
- ♦ the copy of the invoice containing the following information:
 - order number
 - financial authority number
 - full description of consignment, i.e. National Stock Numbers, quantities, etc.

11.4 Additional marking

When so required by the South African Air Force, containers to bear information additional to that specified above.

12. Packing and Delivery of Containers

NOTE: This section covers the delivery requirements of the containers when delivered to the clothing and/or footwear supplier.

12.1 General

- ♦ the relevant requirements of SANS 456 to apply

12.2 Packing

The component parts of the box to be:

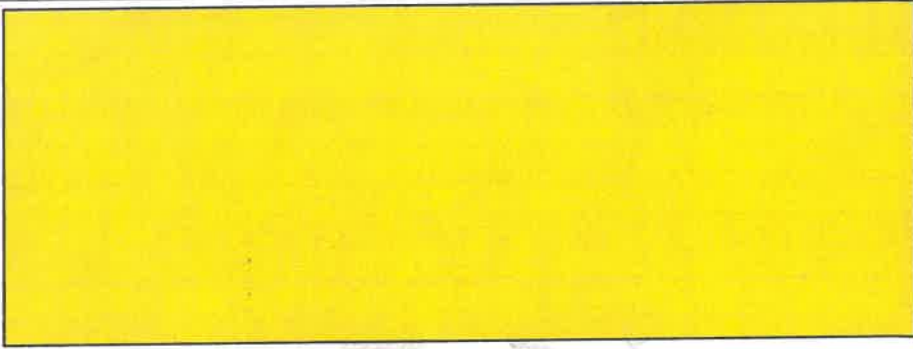
- ♦ packed flat in bundles of 25
- ♦ delivered in a commercially dry condition
- ♦ so packed that they will not be damaged in transit or in storage

12.3 Marking

- ♦ each component part to bear the date of manufacture (month and year); e.g. 08/2008

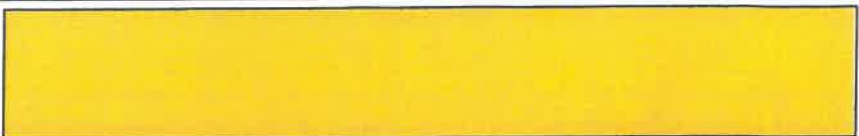










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Figure 7 – Example of bulk container labelling

ORDER NR	2D142199
NSN	18-180-1234
DESCRIPTION	Shoes, Service Dress
SIZE	9W
QUANTITY	100
COLOUR*	Black
GROSS MASS	22.6 Kg
YEAR	2023
	
<i>*Include only if product is supplied in more than one colour.</i>	

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Figure 8 – FIFO Colour identification

1	2	
YEAR	COLOUR CODE OF SPECIFIC YEAR	
2023	Yellow	
2024	Red	
2025	Green	
2026	Royal Blue	
2027	Black	
2028	Purple	
2029	Grey	
2030	Light Blue/Sky Blue	
2031	Pink	
2032	Orange	
2033	Brown	
2034 to 2044	Colour sequence to be repeated from the top	

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13. Applicable Documents

The following documents contain provisions which, through reference in this text, constitute provisions of this specification. All documents are subject to revision and, since any reference to a document is deemed to be a reference to the latest edition of that document, parties to agreements based on this specification are encouraged to take steps to ensure the use of the most recent editions of the documents indicated below. Information on currently valid national, international and CKS documents may be obtained from the South African Bureau of Standards*.

IFCC, *International fibreboard case code.*

ISO 187, *Paper and board – Conditioning of samples.*

ISO 535, *Paper and board – Determination of water absorption – Cobb method.*

ISO 536, *Paper and board – Determination of grammage.*

ISO 2758, *Paper - Determination of bursting strength.*

SANS 431, *Liners and fluting for corrugated board.*

SANS 456:2009, *Corrugated board containers.*

* SABS: Tel. +27 (0) 12 4287911

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ANNEX A

(Informative)

Guideline packing quantities

Series No.	Item	Qty per carton
1	1. Towels bath blue	40
	2. Towels hand blue	60
	3. Face cloth blue	150

Series No.	Item	Qty per carton
2	1. Caps Garrison	200
	2. Cap service	18
	3. Drawers multi colour	400
	4. Hat service blue/grey	200
	5. Jackets F/D, x/small, small	50
	6. Jackets F/D, med, large, x/large	45
	7. Jackets SD Blue Grey	30
	8. Shirt L/S	60
	9. Shirt S/S	100
	10. Shirt F/D L/S	80
	11. Shirt F/D S/S	100
	12. Shirt mess dress	50
	13. Short Gym Blue	200
	14. T-shirt blue/grey	100
	15. Trousers F/D blue/grey	60
	16. Trousers Blue Grey	70
	17. Vest white	150

Series No.	Item	Qty per carton
3	1. Aprons foodhandlers bib blue/grey	200
	2. Apron foodhandlers bib type white	200
	3. Bags duffel blue/grey canvas	40
	4. Belts individual web 57mm	200
	5. Cap foodhandlers white	200
	6. Coats cold weather 3/4 duffel	15
	7. Coats foodhandlers white	50
	8. Coveralls two-piece	30
	9. Gloves black	100 prs
	10. Raincoats nylon blue/grey	50
	11. Shirts foodhandlers	60
	12. Sleeping bag nylon outers	7
	13. Tracksuits	30
	14. Trousers foodhandlers, blue check	80

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Series No.	Item		Qty per carton
4	1.	Belts waist (all sizes)	400
	2.	Boots combat black size 5-9	15
	3.	Boots combat black size 10-12	12
	4.	Boots combat black size 13-15	10
	5.	Boots fireman size 6-12	10
	6.	Boots gum size 5-10	10
	7.	Boots safety black size 5-10	12
	8.	Boots safety black size 11-14	10
	9.	Shoes canvas blue/grey size 5-11	20
	10.	Shoes canvas blue/grey size 12-14	12
	11.	Shoes gunfloor black size 5-11	15
	12.	Shoes gunfloor black size 12-13	12
	13.	Shoes gym leather size 5-14	20
	14.	Shoes mens black evening wear size 6-10	15
	15.	Shoes mens black evening wear sizes 11-13	12
	16.	Shoes safety black size 5-10	12
	17.	Shoes safety black size 11-14	10
	18.	Shoes service black size 5-11	15
	19.	Shoes service black size 12-14	12
	20.	Socks mens cushion sole	200
	21.	Socks mens Black	200
	22.	Socks mens size 9-12	200
	23.	Ties, men	1 000
	24.	Pantihose	900
	25.	Uniform men's S/D	20
	26.	Uniform men's E/W	20
	27.	Skirts ladies	60
	28.	Slacks ladies	60
	29.	TRS men's	60
	30.	Jackets, ladies E/W	20
	31.	Skirts, ladies E/W	50
	32.	Waistcoat, ladies	100
	33.	Jersey, unisex	60

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HISTORY SHEET		
DOC ISSUE	DATE	AMENDMENTS/HISTORY
1	September 1984	First release
2	January 1996	
3	June 2008	Updated format, references and layout of specification. Add annex B. Refer to two separate labels on the short sides of the containers: Label A & Label B
4	April 2011	Amended height of box
5	July 2014	Amend label requirements of bulk container. Add specific size of wording.
05.2	March 2018	Add illustrations Dimensions to reflect flat measurements of box Add information and layout of specification Add Normative references
05.3	April 2018	Delete Annex A Amend dimensions Change numbering to ensure paragraph 11.2 refers to the same information as in version 5
06.0	August 2018	6 th Release
06.1	December 2022	Delete 2 of the 4 labels on the short ends of container. One label on ONE short end (front) of the lid and one label on ONE short end (front) of the base of the same container. Add colours to year of manufacture (figure 8)
07.0	January 2023	7 th Release

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